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LIST OF REFERENCES

1. Advent Group, Inc. Delineation of Mixing Zone, Mississippi River near Sauget, Illinois, October 1988.

2. Advent Group, Inc. Far-Field Dispersion Model: Computer Solution, June 1989.

3. Aldrich Chemical Company Catalogue. 1988-1989. Aldrich Chemical Company, Inc.

4. American Bottoms Regional Wastewater Treatment Facilities, Laboratory Procedures and Quality Control, Volumes I and II, 1989.

5. American Bottoms Regional Wastewater Treatment Facilities, O&M Manual, Volume 1, General Information, 1985.

6. Budavari, Susan, et al. The Merck Index, Eleventh Edition. 1989. Merck & Co., Rahway, N.J.

7. California State Water Resources Control Board. Water Quality Criteria. 1963. NTIS PB82-188244.

8. Dean, John A. Langes Handbook of Chemistry. Thirteenth Edition. 1985. McGraw-Hill Book Company.

9. Horner & Shifrin, Inc. Outfall Sewer Extension & Multi-Port Diffusion System, July, 1989.

10. Howard, Philip H. Handbook of Environmental Fate and Exposure Data for Organic Chemicals, Volume 1, Lewis Publishers, 1989.

11. Illinois Environmental Protection Agency, Pretreatment Workshop, May 1984.

12. Illinois Environmental Protection Agency, Title 35: Environmental Protection, Subtitle C: Water Pollution, Chapter I: Pollution Control Board, April 1988.

13. Leo, A.; C. Hansch, D. Elkins. "Partition Coefficients and Their Uses." Chemical Reviews, 1971, 71:525-616.

14. Lubetkin, S.A., Extended Aeration Systems, Roy F. Weston, Inc., West Chester, Pennsylvania.

15. Miller, M.M., S.P. Waslk, G. Huang, W. Shiu, and D. Mackay. "Relationship between Octanol-Water Partition Coefficients and Aqueous Solubility." Environmental Science and Technology, 1985, 19:522-529.

Table of Contents (Con't)

16. National Academy of Sciences. Drinking Water and Health, Volumes 1-6. 1977-1986. National Academy Press.

17. Pickering, Quentin, Daria O. Carle, Anne Pilli, Tom Willingham, James M. Lazorchak; "Effects of Pollution on Freshwater Organisms," Journal Water Pollution Control Federation, June 1989, Volume 61, pp. 998-1042.

18. Pilli, Anne; Daria O. Carle; Edward Kline; Quentin Pickering; James Lazorchak; "Effects of Pollution on Freshwater Organisms," Journal Water Pollution Control Federation, June 1988, Volume 60, pp 994-1065.

19. Stephan, C.E., D.I. Mount, D.J. Hansen, J.H. Gentile, G.A. Chapman, and W.A. Brungs. Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses. United States Environmental Protection Agency, Washington, DC, 1985. NTIS No. PB85-227049.

20. Tetra Tech, Inc. Bioaccumulation Monitoring Guidance: 1. Estimating the Potential for Bioaccumulation of Priority Pollutants and 301(h) Pesticides Discharged into Marine and Estuarine Waters. Final Report, 1985. EPA Contract No. 68-01-6938.

21. United States Environmental Protection Agency. "Chemical Evaluation Search and Retrieval System (CESARS)." 1988. Accessed through Chemical Information System, Inc. Fein-Marquart Associates, Inc. Baltimore, Md.

22. United States Environmental Protection Agency. "Chemical Hazard Response Information System (CHRIS)." 1986. Accessed through Chemical Information System, Inc. Fein-Marquart Associates, Inc. Baltimore, Md.

23. United States Environmental Protection Agency. Contract Laboratory Program Statement of Work for Inorganic Analysis. SOW No. 787. U.S. EPA, Washington, D.C., 1987.

24. United States Environmental Protection Agency. Contract Laboratory Program Statement of Work for Organic Analysis. U.S. EPA, Washington, D.C., 1988.

25. United States Environmental Protection Agency. "Environmental Fate (ENVIROFATE)." 1984. Accessed through Chemical Information System, Inc. Fein-Marquart Associates, Inc. Baltimore, Md.

26. United States Environmental Protection Agency. Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses. U.S. EPA, Washington, D.C., 1988.

27. United States Environmental Protection Agency. Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses. U.S. EPA, Washington, D.C., 1988.

Table of Contents (Con't)

28. United States Environmental Protection Agency, "Integrated Risk Information System (IRIS)". 1989. Accessed through Chemical Information System, Inc. Fein-Marquart Associates, Inc. Baltimore, Md.

29. United States Environmental Protection Agency, Multimedia Environmental Goals for Environmental Assessment, Volume 2. 1977. NTIS PB-276-920.

30. United States Environmental Protection Agency, "Oil and Hazardous Material/Technical Assistance Data System (OHMTADS)," 1988. Accessed through Chemical Information System, Inc. Fein-Marquart Associates, Inc., Baltimore, Maryland.

31. United States Environmental Protection Agency, Chemical Information Service. Aquatic Information Retrieval System (ACQUIRE). 1987.

32. United States Environmental Protection Agency, Effluent Guidelines Division, Office of Water Regulations and Standards, Fate of Priority Pollutants in Publicly Owned Treatment Works, Final Report - Volumes I and II, September 1982, EPA 440/1-82/303.

33. United States Environmental Protection Agency, Monitoring and Data Support Division. Water Related Fate of 129 Priority Pollutants, Volumes I and II. 1979, PB80-204373, PB80-204381.

34. United States Environmental Protection Agency, Office of Drinking Water. Health Advisories for 25 Organics. 1987. PB87-235578.

35. United States Environmental Protection Agency, Office of Drinking Water. Health Advisories for 7 Organics. 1987. PB87-235586.

36. United States Environmental Protection Agency, Office of Drinking Water. Health Advisories for 50 Pesticides. 1988. PB88-245931.

37. United States Environmental Protection Agency, Office of Emergency and Remedial Response. Superfund Public Health Evaluation Manual. 1986, PB87-183125.

38. United States Environmental Protection Agency, Office of Research and Development, Risk Reduction Engineering Laboratory (Revision 1.0), WERL Treatability Database, September 21, 1988.

39. United States Environmental Protection Agency, Office of Water, Permit Writer's Guide to Water Quality - Based Permitting for Toxic Pollutants, July 1987, EPA 440/4-87-005.

40. United States Environmental Protection Agency, Office of Water, Pretreatment Compliance Monitoring and Enforcement Guidance, July 25, 1986.

41. United States Environmental Protection Agency, Office of Water. Quality Criteria for Water 1986. Washington, DC, 1986. EPA 440/5-86-001.

42. United States Environmental Protection Agency, Office of Water. Technical Support Document for Water Quality-Based Toxics Control. Washington DC, 1985. EPA 440/4-85-032.

43. United States Environmental Protection Agency, Office of Water Enforcement and Permits, Guidance Manual for POTW Pretreatment Program Development, October 1983.

44. United States Environmental Protection Agency, Office of Water Enforcement and Permits, Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program, December 1987.

45. United States Environmental Protection Agency, U.S. Environmental Monitoring and Support Laboratory, EPA Manual of Methods for Chemical Analysis of Water and Wastes, March, 1983, PB 84-128677.

46. United States Environmental Protection Agency, "EPA Regulations on Land Disposal Restrictions," (40 CFR 268).

47. United States Environmental Protection Agency, "EPA Proposed Technical Standards for Sewage Sludge," (40 CFR 257).

48. United States Geological Survey, Water Quality Data "Mississippi River at Alton, Illinois," May 1974-January 1989.

49. United States Geological Survey, Water Quality Data "Mississippi River at Thebes, Illinois," January 1973-January 1989.

50. United States Public Health Service/United States Environmental Protection Agency, Agency for Toxic Substances and Disease Registry. Toxicological Profile for...(30 chemicals). 1987-1989.

51. University of Wisconsin, Superior. Acute toxicity of organic chemicals to Fathead Minnows (Pimephales promelas). Center for Lake Superior Environmental Studies. Volumes 1, 2, and 3, 1984-1986.

52. Verschueren, Karl. Handbook of Environmental Data on Organic Chemicals. Second Edition. Van Nostrand Reinhold Company. New York. 1983.

53. Veith, G., N. Austin, and R. Morris. "A Rapid Method for Estimating Log P for Organic Chemicals." Water Res., 1979, 13:43-47.

54. Walker, John D., "Effects of Chemicals on Microorganisms," Journal Water Pollution Control Federation, June 1988, Volume 60, pp. 1106-1121.

55. Walker, John D., "Effects of Chemicals on Microorganisms," Journal Water Pollution Control Federation, June 1989, Volume 61, pp. 1077-1097.

Table of Contents (Con't)

56. Water Pollution Control Federation and American Society of Civil Engineers, Wastewater Treatment Plant Design, 1977, (reprinted 1982), WPCF Manual of Practice No. 8.

I. GENERAL

A. Introduction

The American Bottoms Regional Wastewater Treatment Facility (ABTP) treats wastewaters from the Cities of East St. Louis, the Villages of Cahokia and Sauget, and other unincorporated areas in Centreville Township where the sewer system is operated by the Commonfields of Cahokia Public Water District.

The Village of Sauget is an industrialized community with a residential population of approximately 200 inhabitants. The influent to the Sauget Physical-Chemical Plant (P-Chem) is at low pH and contains various heavy metals and chemicals, floating scum and oil, grit from groundwater infiltration and sanitary wastes from residents and industrial employees.

The P-Chem flow of approximately 7.0 MGD is screened, skimmed for the removal of scum and oil, pumped, and degritted. A polyelectrolyte is then added and the flow is rapid-mixed, flocculated, and clarified. Effluent from the P-Chem plant flows to the ABTP for further treatment. Sludge from the P-Chem clarifiers is dewatered on continuous cloth belt rotary vacuum filters and disposed of at a landfill.

The American Bottoms (AB) facility provides primary treatment for all of the region except Sauget. This flow reaches the ABTP by way of the East St. Louis and Cahokia pump stations and force mains.

Sewage from the East St. Louis and Cahokia pump stations is degritted and split between four (4) primary clarifiers where coarse solids are removed. Overflow from the primary clarifiers is combined with effluent from the Village of Sauget physical-chemical treatment facility and introduced into the activated sludge aeration basins.

The AB facility is designed to provide secondary (biological) treatment for an average daily flow of 27 mgd. The secondary treatment process was originally designed for and operated as a PACT system, complete mixed activated sludge process with the addition of powdered activated carbon (PAC). However, during the period of December 2, 1987 through March 19, 1989, the system has been operated as an activated sludge facility without PAC due to loss of the PAC regeneration equipment. Carbon addition was re-implemented March 20, 1989 to comply with a federal interim consent decree. The average hydraulic detention time has been 12 hours. Overflow from the aeration basin is split between four (4) final clarifiers. Final clarifier effluent is chlorinated and is discharged to the Mississippi River.

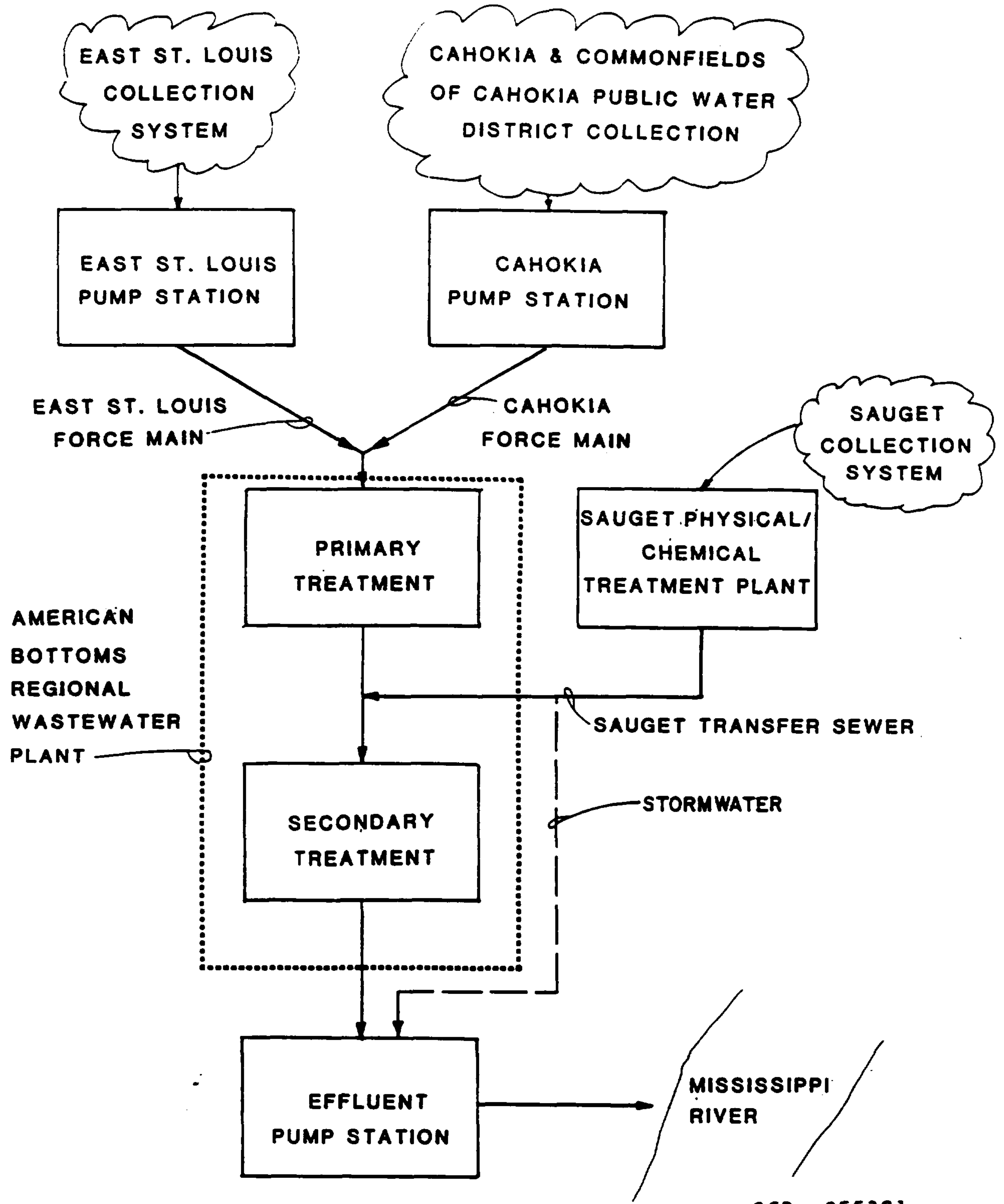
Sludge from the final clarifiers is either recycled to the aeration basins or removed from the system along with the sludge from the primary clarifiers. A majority of the return activated sludge withdrawn from the final clarifiers is recycled to the inlet of the aeration basins by four return activated sludge pumps. The waste activated secondary sludge, as well as the sludge from the primary clarifiers, is thickened separately and then combined for dewatering on vacuum filters. Filter cake is hauled to a landfill for disposal.

A general schematic of the treatment system is provided in Figure 1.

B. Derivation of the Terminology "Fate and Effect"

The terminology "Fate and Effect" (as originally utilized in the Village of Sauget's approved Pretreatment Program document) was taken from references to this terminology as outlined on p. 4-3 of the USEPA program guidance manual titled "Guidance Manual for POTW Pretreatment Program Development" dated October, 1983. (See page viii of "List of References" no. 41, hereinafter cited as "References at No. ____".)

The referenced USEPA guidance document by implication states that the term "fate" relates to the quantification of "the extent of pollutant pass through, interference, inhibition, and sludge contamination" and that the term "effect" relates to providing "a basis for establishing local industrial discharge limitations."



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GENERAL SCHEMATIC OF THE AMERICAN BOTTOMS REGIONAL WASTEWATER TREATMENT FACILITY

FIGURE 1

The terminology "Fate and Effect" will be utilized throughout this report as it relates to the implied meaning as outlined previously and as further defined and outlined in this report.

C. Purpose of "Fate and Effect" Analysis

This "fate and effect" analysis is a detailed review, evaluation, and determination of those pollutants which are a potential concern regarding pass through, interference or sludge contamination; a determination of allowable headworks loading as it relates to the "pollutants of concern"; and the evaluation of the need for "local industrial limits."

Sampling programs and technical methodology to allow for the development of local limits pursuant to the General Pretreatment Regulations of 40 CFR 403 were established in the approved Pretreatment Program.

The purpose of this analysis and report is to present the results of the sampling performed, to identify pollutants of concern and their applicable standards, and to develop and propose local industrial limits as a control mechanism for those pollutants of concern which will pass through the treatment works; which will interfere with the operation of the ABTP, including interference with its sludge processes, sludge use or disposal; which are otherwise incompatible with such works; or to protect the water quality of the Mississippi River.

D. Scope of Fate and Effect Analysis

This report contains the following results, analyses and evaluations:

1. Tabulation and evaluation/analysis of the results of the twelve month fate and effect sampling program, and other sampling programs where applicable;

2. Identification of pollutants of concern present in the system;

3. Calculation of removal efficiencies of influent parameters through the individual treatment processes and comparison of these values to published or anticipated values;

4. Determination of allowable headworks concentrations, for Pollutants of Concern, based on applicable sludge or water quality standards/criteria, calculated removal efficiencies, and other considerations;

5. Evaluation of the need for local industrial limits based on the determination of allowable headworks concentrations and other considerations; and

6. Development of proposed local limits and the implementation procedures for those pollutants of concern for which a need to set a local limit is identified.

II. SAMPLING AND TESTING PROGRAMS

A. American Bottoms Pretreatment Program Laboratory Sampling and Testing Program

1. Laboratory Selection -- In April, 1988 Gulf Coast Laboratories, Inc. (GCL) of University Park, Illinois, was selected to provide sampling and laboratory testing services associated with the fate and effect analysis as required by the American Bottoms Regional Pretreatment Program. The laboratory was responsible for furnishing and maintaining time composite automatic samplers for the eleven sampling locations identified in Figure 2 and in the following descriptions.

Location No. 1 -- P-Chem Influent: The sampling point was located in the influent trough of the pH neutralization basin on the west side of the P-Chem plant. The sample was collected prior to the addition of any treatment chemical.

Location No. 2 -- P-Chem Effluent: The sampling point was located in the effluent channel on the east side of the plant, adjacent to the existing sampler upstream of the P-Chem plant flow meter.

Location No. 3 -- American Bottoms Treatment Plant (ABTP) Primary Influent: The sampling point was located in the inlet channel following the degritting chambers and prior to diversion to the primary clarifiers. This location was adjacent to the existing ABTP primary influent sampler. This location is upstream of any recycle or other waste flows in the treatment plant.

Location No. 4 -- ABTP Primary Effluent: The sampling point was located in the wastewater channel adjacent to the existing sampler, downstream from the combined return from the primary clarifiers, and upstream of the return activated sludge addition point. Other documents such as the Village of Sauget's Pretreatment Ordinance and Program, request for proposal for the Fate and Effect Laboratory Sampling and Testing Program and other associated

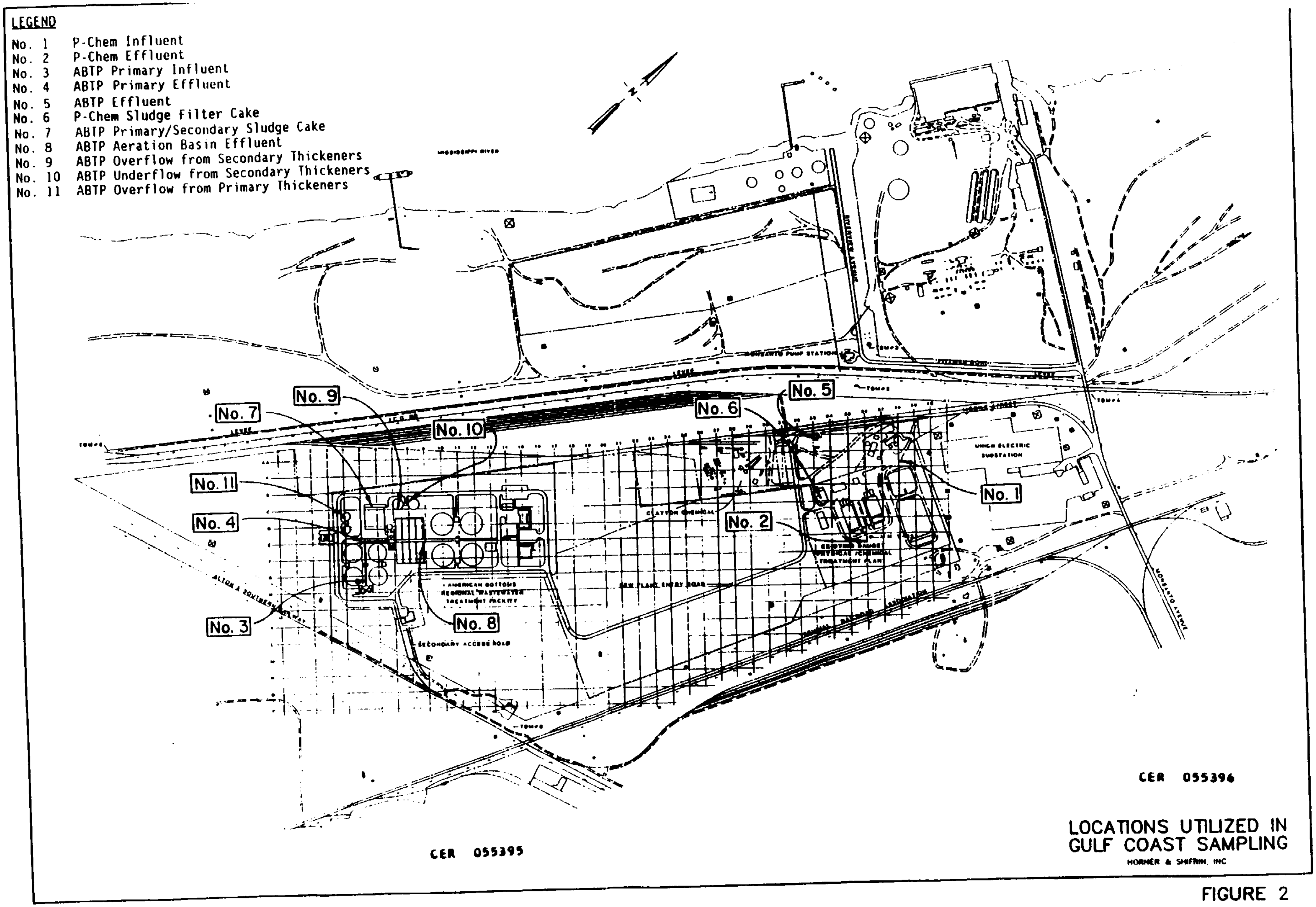
LEGEND
No. 1 P-Chem Influent
No. 2 P-Chem Effluent
No. 3 ABTP Primary Influent
No. 4 ABTP Primary Effluent
No. 5 ABTP Effluent
No. 6 P-Chem Sludge Filter Cake
No. 7 ABTP Primary/Secondary Sludge Cake
No. 8 ABTP Aeration Basin Effluent
No. 9 ABTP Overflow from Secondary Thickeners
No. 10 ABTP Underflow from Secondary Thickeners
No. 11 ABTP Overflow from Primary Thickeners
No. 9
No. 7
No. 10
No. 5
No. 6
No. 11
No. 4
No. 1
No. 2
No. 3
No. 8
CLAYTON CHEMICAL
SECONDARY ACCESS ROAD
CER 055396
CER 055395
LOCATIONS UTILIZED IN
GULF COAST SAMPLING
HORNER & SHIFRIN, INC

FIGURE 2

documents refer to this sampling point as "secondary influent" but because of recycle streams and mass balance computation requirements, the actual sampling was performed on the primary effluent as described above. The term primary effluent replaces the term secondary influent (used in other documents as discussed above) and will be utilized herein as the correct term which defines this sampling point.

Location No. 5 -- ABTP Effluent: The sampling point was located in the influent bay of the effluent pump station.

Location No. 6 -- P-Chem Sludge Filter Cake: The sampling point was located on the conveyor belt on the discharge side of the vacuum filters.

Location No. 7 -- ABTP Primary/Secondary Sludge Cake: The sampling point was located on the final discharge conveyor belt between the vacuum filters and leading to the dumpster.

Location No. 8 -- Aeration Basin Effluent: The sampling point was located in the aeration basin effluent channel north of the aeration tanks and adjacent to the stairway after all plant flows were recombined and before diversion to the final clarifiers.

Location No. 9 -- ABTP Overflow from Secondary Thickeners: The sampling point was located in the effluent trough of whichever secondary thickener was in operation at the time of sampling. Sandbags were used to raise the water level to facilitate sample collection.

Location No. 10 -- ABTP Underflow from Secondary Thickeners: The sampling point was located at the valve of the 3/4" sample collection pipe between the thickener tanks.

Location No. 11 -- ABTP Overflow from Primary Thickeners: The sampling point was located in the effluent trough of whichever primary thickener was in operation at the time of sampling. Sandbags were used to raise the water level to facilitate sample collection.

A combination of composite and grab samples were collected for the analysis of various wastewater parameters. These samples were then preserved and transported to the laboratory where they were analyzed as specified. Reports of the analyses were submitted on a monthly basis, generally within forty-five (45) to sixty (60) days of the date on which sampling occurred.

Pursuant to the provisions of Section 13.0 of the approved ABTP Pretreatment Program's Fate and Effects Analysis Workplan for Local Limit Development, the ABTP secondary ash and the effluent from the Zimpro heat exchangers were not sampled because the Zimpro PACT/WAR processes were inoperational. In addition, the secondary sludge was not sampled individually because it is combined with the primary sludge prior to filtering due to the inoperational status of the Zimpro PACT/WAR process.

2. Sampling Schedule -- Samples were collected over a three-day period (commencing on a Tuesday) during each month of twelve (12) months beginning May 3, 1988, and concluding April 13, 1989. As requested by USEPA, the sampling times were staggered in an attempt to account for retention times and flow travel times between processes. A summary of these times and the dates on which sampling occurred is provided in Table 1. The P-Chem sludge filters were not operating at any time during the January 1989 sampling event. Therefore, no sample of the P-Chem sludge filter cake was collected by Gulf Coast in January.

3. Parameters Analyzed -- The samples collected were analyzed for a variety of conventional, metallic, pesticide and organic priority pollutants in accordance with the provisions of Section 13.0 of the approved Pretreatment Program Fate and Effects Analysis Workplan for Local Limit Development. The pollutants analyzed and the applicable sampling locations are summarized in Table 2 and their minimum reported detection limits are summarized in Table 3. EA Engineering, Science, and Technology, Inc. and The Advent Group, Inc. supplied specialized expertise in reviewing the laboratory data and results in order to refine the data base to be utilized in this study. Results of sampling were reviewed by EA Engineering, Science, and

TABLE 1

SUMMARY OF LABORATORY SAMPLING AND TESTING PROGRAM

SAMPLING SCHEDULE

Sample Designation	Initiate Sampling (Time/Day)	Terminate Sampling (Time/Day)	VOC, Etc. Grab
No. 1	9:30 a.m./Day 1	9:30 a.m./Day 2	After 9:30 a.m./Day 1
No. 2	2:00 p.m./Day 1	2:00 p.m./Day 2	After 2:00 p.m./Day 1
No. 3	8:00 a.m./Day 1	8:00 a.m./Day 2	After 8:00 a.m./Day 1
No. 4	3:00 p.m./Day 1	3:00 p.m./Day 2	Before 3:00 p.m./Day 2
No. 5	1:00 a.m./Day 2	1:00 a.m./Day 3	After 1:00 a.m./Day 2
No. 6	3:30 p.m./Day 2(1)	Varies(1)	Day 2(1)
No. 7	7:30 a.m./Day 2(1)	Varies(1)	Day 2(1)
No. 8	9:00 p.m./Day 1	9:00 p.m./Day 2	After 9:00 p.m./Day 1
No. 9	Day 2(1)	Day 2(1)	Day 2(1)
No. 10	4:00 p.m./Day 2(1)	Varies(1)	Day 2(1)
No. 11	3:00 a.m./Day 2(1)	Day 2(1)	Day 2(1)

(1) Actual hours and time that this process was running varied. Samples were taken during actual hours of operation. No sample was taken of the P-Chem Sludge Filter Cake during the month of January because the vacuum filters were not in operation at any time during the three day sampling event.

LEGEND

No. 1 P-Chem Influent
No. 2 P-Chem Effluent
No. 3 ABTP Primary Influent
No. 4 ABTP Primary Effluent
No. 5 ABTP Effluent
No. 6 P-Chem Sludge Filter Cake
No. 7 ABTP Primary/Secondary Sludge Filter Cake
No. 8 ABTP Aeration Basin Effluent
No. 9 ABTP Overflow from Secondary Thickeners
No. 10 ABTP Underflow from Secondary Thickeners
No. 11 ABTP Overflow from Primary Thickeners

DATES SAMPLING CONDUCTED

May 3-5, 1988
June 14-16, 1988
July 12-14, 1988
August 9-11, 1988
September 13-15, 1988
October 11-13, 1988
November 8-10, 1988
December 13-15, 1988
January 17-19, 1989
February 14-16, 1989
March 14-16, 1989
April 11-13, 1989

TABLE 2

PARAMETERS ANALYZED IN SAMPLING PROGRAM

All wastewater and sludge samples were analyzed for:

Arsenic (total)
Barium (total)
Boron (total)
Cadmium (total)
Chloride
Chromium (total hexavalent)
Chromium (total trivalent)
Copper (total)
Cyanide
Fluoride
Iron (total)
Lead (total)
Manganese (total)
Mercury (total)
Nickel (total)
Oils, Fats, and Greases
Phenolics
pH
Selenium (total)
Silver (total)
Sulfate
Total Dissolved Solids
Total Organic Carbon
Zinc (total)

USEPA Priority Pollutants

All wastewater and sludge samples were also searched for non-priority pollutants including the following. Attempts were made to identify and quantify peaks >10 times adjacent background noise.

Xylene
4-chlorophenol
4-chloro-2-tolylphenol
di-tert-amyiphenol
4-aminodiphenylamine
aniline
benzaldehyde
biphenyl
2-chloronitrobenzene
4-chloronitrobenzene
alpha-chlorotoluene
2,3-dichloronitrobenzene
3,4-dichloronitrobenzene
alpha, alpha-dichlorotoluene
1,3-dichloro-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
N-('1,3-dimethylbutyl)-N-phenyl-1,4-benzenediamine
N,N-bis(1,1-dimethylethyl')-1,4-benzenediamine
N-('1,4-dimethylpentyl)-N-phenyl-1,4-benzenediamine
N,N-bis(1,4-dimethylpentyl)-1,4-benzenediamine
dodecylnitrobenzene
4-ethoxyaniline
mono (branched dodecyl) aniline
2-nitroaniline
4-nitroaniline
4-nitrodiphenylamine
Phosphoric acid, bis (1,1-dimethylethyl) phenyl-ester
Phosphoric acid, bis (1,1-dimethylethyl) phenyl-phenyl-diester
Phosphoric acid, methylphenyl-diphenyl-ester
Phosphoric acid, tris (phenyl)-ester
Phosphoric acid, tris (tolyl)-ester
Pinene
1,3,5-trichloro-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
triethylamine

Wastewater samples (Nos. 1,2,3,4,5,8,9,10,11) were also analyzed for:

BOD_5
Suspended Solids
Fecal Coliform
Chlorine Residual
COD

Sludge samples (Nos. 6,7) were also analyzed for:

% solids
% volatile solids
EP toxicity parameters:
- As
- Ba
- Cd
- Cr
- Pb
- Hg
- Se
- Ag
- Endrin
- Lindane
- Methoxychlor
- Toxaphene
- 2,4-D
- 2,4,5-TP

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TABLE 3

MINIMUM REPORTED DETECTION LIMITS
FOR PARAMETERS ANALYZED MONTHLY

Parameter	Minimum Reported Detection Limit	
BOD	2	mg/l
Chloride	1.0	mg/l
Chlorine Residual	0.020	mg/l
Cyanide, Total	0.010	mg/l
COD	50	mg/l
Chromium, Trivalent	0.040	mg/l
Chromium, Hexavalent	0.020	mg/l
Fluoride	0.10	mg/l
Total Organic Carbon	1.0	mg/l
Oil/Grease	5	mg/l
Phenolics	0.005	mg/l
Sulfate	5.0	mg/l
TDS	10	mg/l
TSS	1	mg/l
Antimony, Total	0.50	mg/l
Arsenic, Total	0.0020	mg/l
Barium, Total	0.050	mg/l
Beryllium, Total	0.0020	mg/l
Boron, Total	0.010	mg/l
Cadmium, Total	0.0040	mg/l
Chromium, Total	0.020	mg/l
Copper, Total	0.020	mg/l
Iron, Total	0.030	mg/l
Lead, Total	0.0020	mg/l
Manganese, Total	0.010	mg/l
Mercury, Total	0.00020	mg/l
Nickel, Total	0.020	mg/l
Selenium, Total	0.0020	mg/l
Silver, Total	0.030	mg/l
Thallium, Total	0.30	mg/l
Zinc, Total	0.010	mg/l
alpha-BHC	0.5	ug/l
beta-BHC	0.5	ug/l
delta-BHC	0.5	ug/l
gamma-BHC (Lindane)	0.5	ug/l
Heptachlor	0.5	ug/l
Aldrin	0.5	ug/l
Heptachlor epoxide	0.5	ug/l
Endosulfan I	0.5	ug/l
Dieldrin	1.0	ug/l
4,4'-DDE	1.0	ug/l
Endrin	1.0	ug/l
Endosulfan II	1.0	ug/l
4,4'-DDD	1.0	ug/l
Endosulfan Sulfate	1.0	ug/l
4,4'-DDT	1.0	ug/l
Methoxychlor	5.0	ug/l
Endrin ketone	1.0	ug/l
alpha-Chlordane	5.0	ug/l
gamma-Chlordane	5.0	ug/l
Toxaphene	10.0	ug/l
Aroclor 1016	5.0	ug/l
Aroclor 1221	5.0	ug/l
Aroclor 1232	5.0	ug/l
Aroclor 1242	5.0	ug/l

Parameter	Minimum Reported Detection Limit	
Aroclor 1248	5.0	ug/l
Aroclor 1254	10.0	ug/l
Aroclor 1260	10.0	ug/l
PCBs, Total	10.0	ug/l
Chloromethane	10.0	ug/l
Bromomethane	10.0	ug/l
Vinyl Chloride	10.0	ug/l
Chloroethane	10.0	ug/l
Methylene Chloride	5.0	ug/l
Acetone	10.0	ug/l
Carbon Disulfide	5.0	ug/l
1,1-Dichloroethene	5.0	ug/l
1,1-Dichloroethane	5.0	ug/l
1,2-Dichloroethene (total)	5.0	ug/l
Chloroform	5.0	ug/l
1,2-Dichloroethane	5.0	ug/l
2-Butanone	10.0	ug/l
1,1,1-Trichloroethane	5.0	ug/l
Carbon Tetrachloride	5.0	ug/l
Vinyl Acetate	10.0	ug/l
Bromodichloromethane	5.0	ug/l
1,2-Dichloropropane	5.0	ug/l
cis-1,3-Dichloropropene	5.0	ug/l
Trichloroethene	5.0	ug/l
Dibromochloromethane	5.0	ug/l
1,1,2-Trichloroethane	5.0	ug/l
Benzene	5.0	ug/l
trans-1,3-Dichloropropene	5.0	ug/l
Bromoform	5.0	ug/l
4-Methyl-2-Pentanone	10.0	ug/l
2-Hexanone	10.0	ug/l
Tetrachloroethene	5.0	ug/l
1,1,2,2,-Tetrachloroethane	5.0	ug/l
Toluene	5.0	ug/l
Chlorobenzene	5.0	ug/l
Ethylbenzene	5.0	ug/l
Styrene	5	ug/l
Xylene	5	ug/l
Acrolein	500	ug/l
Acrylonitrile	100	ug/l
Dichlorodifluoromethane	20	ug/l
Bis(chloromethyl)ether	20	ug/l
Trichlorofluoromethane	10	ug/l
2-Chloroethyl Vinyl Ether	10	ug/l
Phenol	10	ug/l
Bis(2-Chloroethyl)-ether	10	ug/l
2-Chlorophenol	10	ug/l
1,3-Dichlorobenzene	10	ug/l
Benzyl Alcohol	10	ug/l
1,4-Dichlorobenzene	10	ug/l
1,2-Dichlorobenzene	10	ug/l
2-Methylphenol	10	ug/l
Bis(2-chloroisopropyl)-ether	10	ug/l
4-Methylphenol	10	ug/l

Parameter	Minimum Reported Detection Limit		Parameter	Minimum Reported Detection Limit	
N-Nitroso-Di-n-propylamine	10	ug/l	4-Chlorophenyl-phenylether	10	ug/l
Hexachloroethane	10	ug/l	Fluorene	10	ug/l
Nitrobenzene	10	ug/l	4-Nitroaniline	50	ug/l
Isophorone	10	ug/l	4,6-Dinitro-2-methylphenol	50	ug/l
2-Nitrophenol	10	ug/l	N-Nitrosodiphenylamine	10	ug/l
2,4-Dimethylphenol	10	ug/l	4-Bromophenyl-phenylether	10	ug/l
Benzoic Acid	50	ug/l	Hexachlorobenzene	10	ug/l
Bis(2-Chloroethoxy)-methane	10	ug/l	Pentachlorophenol	50	ug/l
2,4-Dichlorophenol	10	ug/l	Phenathrene	10	ug/l
1,2,4-Trichlorobenzene	10	ug/l	Anthracene	10	ug/l
Naphthalene	10	ug/l	Di-n-Butylphthalate	10	ug/l
4-Chloroaniline	10	ug/l	Fluoranthene	10	ug/l
Hexachlorobutadiene	10	ug/l	Pyrene	10	ug/l
4-Chloro-3-methylphenol	10	ug/l	Butylbenzylphthalate	10	ug/l
2-Methylnaphthalene	10	ug/l	3,3'-Dichlorobenzidine	20	ug/l
Hexachlorocyclopentadiene	10	ug/l	Benzo(a)anthracene	10	ug/l
2,4,6-Trichlorophenol	10	ug/l	Chrysene	10	ug/l
2,4,5-Trichlorophenol	50	ug/l	Bis(2-Ethylhexyl)phthalate	10	ug/l
2-Chloronaphthalene	10	ug/l	Di-n-Octyl phthalate	10	ug/l
2-Nitroaniline	50	ug/l	Benzo(b)fluoranthene	10	ug/l
Dimethylphthalate	10	ug/l	Benzo(k)fluoranthene	10	ug/l
Acenaphthylene	10	ug/l	Benzo(a)pyrene	10	ug/l
2,6-Dinitrotoluene	10	ug/l	Indeno(1,2,3-cd)pyrene	10	ug/l
3-Nitroaniline	50	ug/l	Dibenzo(a,h)anthracene	10	ug/l
Acenaphthene	10	ug/l	Benzo(g,h,i)perylene	10	ug/l
2,4-Dinitrophenol	50	ug/l	1,2-Diphenylhydrazine	10	ug/l
4-Nitrophenol	50	ug/l	N-Nitrosodimethylamine	10	ug/l
Dibenzofuran	10	ug/l	Benzidine	99	ug/l
2,4-Dinitrotoluene	10	ug/l	Dioxin	2	ug/l
Diethylphthalate	10	ug/l			

In addition, an attempt was made to identify and quantify all peaks on the total ion plots that had peak heights greater than or equal to ten (10) times the adjacent background noise. Method detection limits for these compounds are variable, but typically comparable to those for other volatile and semi-volatile compounds.

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Technology, Inc. and The Advent Group, Inc. in order to identify those parameters which showed a high level of variability between analyses and/or for which the sampling data were insufficient or inadequate to draw accurate and reliable conclusions to achieve the purpose of the fate and effect analysis described in Section I.C above.

A rationale was developed to identify sampling data which were insufficient or inadequate, due to their sporadic nature or low or nondetected concentrations in plant influents or the plant effluent, for use in determining those pollutants of potential concern and evaluating the need for local industrial limits. The data identified under this rationale were not further evaluated for the determination of local limits unless the parameter was potentially bioaccumulative. The specific rationale applied to evaluate the sufficiency of the data and a listing of the parameters determined to have insufficient data under each such rationale are described in the numbered paragraphs set forth below. Each paragraph number also serves as a numerical footnote to the listing of these parameters in Appendix A-4.

1. Chemical class identification only: This notation was used to designate those parameters which were identified solely in terms of a broad chemical classification. This category was made up of those parameters identified as "unknown" or "substituted," e.g., unknown alkylated benzene or substituted ethanol, and those having an unknown or improbable chemical structure or name, and for which no water quality or health criteria were available. These parameters were deemed to have insufficient data for use in evaluating the need for local industrial limits.

Alkyl Substituted Benzene	Phenyl-Bicyclohexyl
Aniline + unknown	Substituted Acid
C3-Benzene	Substituted Benzamide
C4-Benzene	Substituted Benzamine
Dimethyltrisulfide	Substituted Benzamine + unknown
Metetilachlor	Substituted Benzene

Substituted Benzene + unknown
Substituted Benzenediamine
Substituted Bicycloheptanol
Substituted Bicyclohexyl
Substituted $C_{10}H_{16}O$
Substituted Diazene
Substituted Ethanol
Substituted Ethanol Acetate
Substituted Ethanol Phosphate
Substituted Ethanone
Substituted Formamide
Substituted Glycine
Substituted Hexanone
Unknown + PPL
Unknown Acid
Unknown Acid + Substituted Benzene
Unknown Acid Ester
Unknown Alkylated Benzene
Unknown Aromatic Hydrocarbon
Unknown Benzene $C_6H_4Cl_2$
Unknown Benzene C_8H_{10}
Unknown C_9H_{12}
Unknown Biphenyl-Diamine
Unknown $C_{10}H_{14}$
Unknown $C_{10}H_{18}$
Unknown $C_{10}H_{18}O$
Unknown $C_{10}H_8$
Unknown $C_{11}H_{24}$
Unknown $C_{11}H_{26}$
Unknown $C_{12}H_{26}$
Unknown $C_{18}H_{14}$
Unknown $C_5H_{10}O$
Unknown $C_6H_8N_2$
Unknown $C_7H_{14}O$
Unknown C_8H_7N
Unknown C_9H_{20}
Unknown Ethanol Acetate
Unknown Hydrocarbon
Unknown Hydrocarbon + HSL
Unknown Hydrocarbon + ISTD
Unknown Hydrocarbon + PPL
Unknown Hydrocarbon + Unknown
Unknown Hydrocarbon $C_{10}H_{16}$
Unknown Sterol
Unknown Substituted Acid

2a. Not detected at any location during any sampling event. The parameters set forth below were analyzed each month but were not detected at any sampling location at any time and, accordingly, these parameters were dismissed from further evaluation.

Heptachlor Epoxide
Endosulfan I
Endosulfan Sulfate
Methoxychlor
Endrin Ketone
Toxaphene
Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254

Aroclor 1260	Hexachlorobutadiene
PCB's, Total	4-Chloro-3-methylphenol
Chloromethane	Hexachlorocyclopentadiene
Bromomethane	2,4,5-Trichlorophenol
Vinyl Chloride	2-Chloronaphthalene
Chloroethane	Dimethylphthalate
1,1-Dichloroethene	Acenaphthylene
1,2-Dichloroethene	2,6-Dinitrotoluene
Carbon Tetrachloride	3-Nitroaniline
Vinyl Acetate	2,4-Dinitrotoluene
1,2-Dichloropropane	4-Chlorophenyl-phenylether
cis-1,3-Dichloropropene	4,6-Dinitro-2-methylphenol
Dibromochloromethane	4-Bromophenyl-phenylether
1,1,2-Trichloroethane	Hexachlorobenzene
trans-1,3-Dichloropropene	Fluoranthene
Bromoform	Pyrene
2-Hexanone	3,3'-Dichlorobenzidine
1,1,2,2,-Tetrachloroethane	Benzo(a)anthracene
Acrylonitrile	Chrysene
Dichlorodifluoromethane	Benzo(b)fluoranthene
Bis(chloromethyl)ether	Benzo(k)fluoranthene
Trichlorofluoromethane	Benzo(a)pyrene
2-Chloroethyl Vinyl Ether	Indeno(1,2,3-cd)pyrene
Bis(-2-Chloroethyl)ether	Dibenz(a,h)anthracene
Bis(-2-Chloroisopropyl)ether	Benzo(g,h,i)perylene
N-Nitroso-Di-n-propylamine	1,2-Diphenylhydrazine
Hexachloroethane	N-Nitrosodimethylamine
Isophorone	Benzidine
Bis(-2-Chloroethoxy)methane	Dioxin

2b. <u>Detected only at or near MDL and sporadically at any location during any sampling event</u>. Parameters which were detected only at or near MDL at any sampling location during any sampling event are set forth below. The results for these parameters were indeterminate, hence the data could not be used for further evaluation.

2-Methyl-2-Propanethiol	Dieldrin
2-Methylphenol	Diethylbenzene
2-Methylpropyl ester acetic acid	Diethylphthalate
2-Propylfuran	Dimethyl Undecane
Acenaphthalene	Dimpylate
Acridinamine	Endosulfan II
Altrazineze	Fluorene
Anthracene	Methylpropanol
Benzeneacetic Acid	Nonane
Bromodichloromethane	Pentachlorophenol
Butoxyethanol	Propynylbenzene
Caffeine	alpha-BHC
Carbon Disulfide	alpha-Chlordane
Dibenzofuran	delta-BHC

2c. Not detected in plant influents or final effluent but detected in one or more other locations at some time. Parameters which were not detected in sampling of either plant influent or final effluent but which were detected in one or more other sampling locations during the fate and effects sampling program are set forth below. These parameters were then further identified as bioconcentratable substances (2cY) or nonbioconcentratable substances (2cN) in accordance with the procedures discussed in Section III.A.2. Parameters identified as nonbioconcentratable substances were deemed to have insufficient data for use in evaluating the need for local industrial limits and were dismissed from further consideration. For parameters identified as bioconcentratable substances, it was determined that although undetected in the influents and effluent, the presence of these parameters in other sampling locations indicated the potential for them to be present below the detection limit in the influents or effluent, and could thereby bioaccumulate in the receiving waters if they were bioconcentratable substances. As discussed more fully in Section

III.A.2, further evaluation of the bioconcentratable substances was performed by comparing the detection limit, adjusted by the ratio of the 7Q10 flow to the effluent flow, to a health based limit, in accordance with the TSD guidance (References at No. 40). If this further evaluation yielded an adjusted detection limit which was less than the human health-based limit, these parameters were also eliminated from further evaluation.

1,1-Dichloroethane (2cN)
2,4,6-Trichlorophenol (2cY)
2-Ethyl-1-Hexanol (2cN)
2-Ethylhexanol (2cN)
2-Hexanol (2cN)
2-Methylheptane (2cY)
2-Pentanone (2cN)
3-Ethylhexane (2cN)
3-Methylheptane (2cN)
Acrolein (2cN)
Benzenediamine (2cN)
Benzenediol (2cN)
Benzenepropanoic Acid (2cN)
Butoxyethanol Phosphate (2cN)
Butyl Ester Acetic Acid (2cN)
Camphene (2cN)
Cyclohexadiene-Dione (2cY)
Decane (2cY)
Dimethyl-Diazine (2cN)
Methanethiol (2cN)
Methylbenzenamine (2cN)
Methylhexanone (2cN)
Nitro-Phenyl-Benzenamine (2cN)
Octane (2cN)
Pentadecanoic Acid (2cN)
Phosphinic Acid, Ester (2cN)
Thiobismethane (2cN)
Trimethylcyclohexane (2cN)
Undecane (2cN)
alpha-Pinene (2cN)
beta-BHC (2cY)

2d. Detected only at or near method detection limit (MDL) in plant influents and final plant effluent but detected in one or more other locations at some time. Parameters which were detected only at or near the MDL in sampling of plant influents and final plant effluent but which were detected in one or more other sampling locations during the fate and effects sampling program are set forth below. These parameters were also identified as bioconcentratable (2dY) or nonbioconcentratable (2dN) substances. Nonbioconcentratable substances were dismissed from further consideration based on the same rationale presented in footnote

2c above. Bioconcentratable substances were further evaluated using the same rationale presented in footnote 2c above.

1,2-Dichloroethane (2dN)
2,4-Dimethylphenol (2dN)
2,4-Dinitrophenol (2dN)
4'4'-DDD (2dY)
Benzyl Alcohol (2dN)
Dimethyldisulfide (2dN)
Dodecanoic Acid (2dY)
Endrin (2dY)
Ethylmethylbenzene (2dY)
Heptachlor (2dY)
Phenanthrene (2dY)
gamma-BHC (Lindane) (2dY)
Trimethylbenzene (2dY)

3a. <u>Nonbioconcentratable substance not detected in final effluent but detected in plant influents</u>. Parameters which were detected in plant influents but were not detected in the final effluent are set forth below. These parameters were not further evaluated as they were not apparent in the final effluent and offered no threat of bioaccumulation even if present below detectable levels.

Benzoic Acid
4-Methylphenol
5-Methyl-2-Hexanone
Cineole
Dichloropropene
Ethanol
Heptylnonylbenzene
Hexadecanoic Acid
N-Nitrososdiphenylamine
Octadecanoic Acid
Phenyl-Formamide
2-Propanol
Styrene
Tetrachloroethene
Tetrahydrofuran

3b. <u>Bioconcentratable substance not detected in final effluent but detected in plant influents</u>. Bioconcentratable substances which were detected in plant influents but which were not detected in the final effluent are set forth below. These parameters, although undetected in the effluent, were further evaluated for bioaccumulation potential based on the supposition that they may be present in the effluent albeit at a concentration below the MDL. The evaluation of these bioconcentratable substances was performed using the same rationale presented in footnote 2c above.

Aldrin	Propylbenzene
1,2,4-Trichlorobenzene	Tetradecanoic Acid
2-Methylnaphthalene	gamma-Chlordane
4'4'-DDT	

4. Not detected in plant influents but detected at or near MDL in final effluent. Parameters which were not detected in plant influents but which were detected at or near MDL in the final effluent are set forth below. These parameters were further identified as bioconcentratable (4Y) or not (4N) to determine if there was a need for further evaluation. Because none of these parameters were identified as potentially bioaccumulative, they were dismissed from further evaluation.

   2-Methyl-2-Propanol (4N)   Phthalic Anhydride (4N)

5. Sporadic detection and no health or aquatic criteria identified. Parameters detected at various locations during various sampling events with no pattern of occurrence identifiable are set forth below. Attempts were made to identify health or aquatic criteria for these parameters with no success. Accordingly, these parameters had insufficient data on which to evaluate the need for local industrial limits and were dismissed from further evaluation.

   1-Methyl-4-(1-Methylethyl)-7-Oxabicyclo[2,2,1]heptane

As a result of the above-described review of the sampling data, a number of parameters and their specific data points were eliminated from further review and evaluation. Appendix A-4 contains a listing of these parameters which were eliminated from further review, with a corresponding footnote denoting the applicable above paragraph which provides the rationale that supported the elimination of each parameter. Appendices A-1 through A-3 contain the sampling results for the remaining parameters.

4. Data Quality -- Weston/Gulf Coast Laboratories was required to adhere to a comprehensive Quality Control/Quality Assurance (QC/QA) and data validation program to assure consistent, defensible data. The quality control program is a systematic method to assure the precision and accuracy of analyses meet specific quality control objectives.

The quality control for analyses of inorganics in this sampling program was as follows:

a. A procedure blank was analyzed with each monthly set of field samples. This involved taking a blank sample, presumably devoid of any detectable concentrations of parameters subject to analysis, and processing and analyzing it as if it were a sample from the field. This was done to assure that the lab equipment was not reporting results for constituents that were not present.

b. A continuing calibration of an internal midpoint standard was analyzed with each monthly set of field samples. This calibration was run after every tenth analysis performed to assure that the equipment was not drifting out of calibration.

c. An initial calibration verification sample (GCL QC sample) was analyzed using an external standard with each monthly set of field samples. These external standards were samples of known constituents and concentrations processed and analyzed to verify the validity of analytical results.

d. A sample was analyzed in duplicate with each monthly set of field samples to assure the reproducibility of analytical results.

e. A matrix spike was analyzed in duplicate with each monthly set of nine (9) wet samples, and with each monthly set of two (2) sludge samples. This matrix spike was a field sample "spiked" with known concentrations of parameters subject to the analyses being performed. The results of the analyses of these spiked samples were compared to the known concentrations to determine the recovery of the constituents. The recoveries allowed in such an analysis are controlled by the USEPA Contract Lab Program.

Once all the quality control procedures were performed, calculated and reported on quality control data report sheets, the data were reviewed by the analyst to verify that all data were within acceptance limits (obtained from quality control acceptance range tables).

The quality control data report sheets were then reviewed by the Quality Control/Quality Assurance personnel and by computer analysis of the data to verify that the data are within acceptance ranges. The quality control acceptance range charts are updated monthly by the Quality Control/Quality Assurance personnel. The external reference samples are also monitored by the QC/QA personnel to verify they are within acceptable range. The data received indicate that this protocol was followed.

In order to monitor method precision and accuracy in the analysis of organics, duplicate matrix spikes were analyzed once per monthly batch of samples of a similar matrix, and for each method. Matrix spike compounds for each type of analysis, and limits for percent recovery and relative percent difference were identified and checked against tabulated matrix spike recovery and relative percent difference values. Data which were outside of acceptance ranges for recoveries and relative percent differences were addressed in the summary case narratives.

To monitor method quality control and sample integrity, reagent water blanks and field blanks were analyzed and surrogate spike compounds were added to selected samples. A reagent water blank was analyzed every day that semivolatiles or pesticides/PCB's were extracted or with every set of field samples, whichever was more often. A reagent water blank was analyzed each day before volatile analysis was performed. A pair of field blanks accompanied each monthly batch of sample bottles into the field for each type of analysis, and were analyzed with the associated samples. In general, the limits for contaminants in these blanks were met.

Limits for contaminants in blanks were as follows:

Pesticides/PCB's and BNA's -- any compound, except common phthalate esters, on the target compounds list present in a blank were required to be below the Contract Required Detection Limit (CRDL). Common phthalate esters were required to be below five times the CRDL. Any tentatively identified compounds present in the blank were required to be less than 50% of the amount of that compound in any of the associated samples.

VOA -- all contaminants except the common laboratory solvents, methylene chloride, acetone, and toluene, in the daily reagent water blank were required to be below the CRDL before analysis of samples proceeded. Target compounds, except common laboratory solvents, in the field blank were required to be below the CRDL. Common laboratory solvents in the field blank were required to be below five times CRDL. Tentatively identified compounds in a field blank were required to be less than 50% of that component in any of the associated samples.

If the limits for contaminants were exceeded in a blank and any of the associated samples contained that compound at reportable levels, corrective action was taken and documented. The samples associated with the suspect blank were re-analyzed if sufficient sample volume was available. If sufficient sample volume was not available, the problem and corrective actions taken were discussed in the Quality Assurance summary narrative.

Surrogate spike compounds were added to each sample analyzed for acid and base/neutral extractables, pesticides and PCB's or volatile organics. Surrogate spike compounds and recovery limits are specified by the QC/QA program. If a surrogate recovery fell outside of these limits, the sample was re-analyzed. If the surrogate recovery of the re-analyzed sample was still outside of the limits, both samples were reported and the problem was described in the Quality Assurance summary narrative.

In addition to the internal quality control checks performed by Gulf Coast, the data were also reviewed for comparability to the American Bottoms test data which were available for the P-Chem influent and effluent, AB primary influent and effluent, AB plant effluent, and AB sludge filter cake on the dates Gulf Coast sampling occurred. Upon completion of this review, Gulf Coast was contacted regarding any potential anomalies that became apparent and these were evaluated further by Gulf Coast. On a few occasions, this check uncovered typographical, calculation, and data transcription errors which were subsequently corrected in the data set.

As an additional and detailed review of the data supplied by Gulf Coast, EA Engineering, Science, and Technology, Inc. randomly chose data from one sampling event and performed an audit on it. The results of this audit are provided in Appendix B.

B. <u>American Bottoms In-house Sampling/Testing</u>

1. <u>Lab Facilities</u> -- The analytical laboratory at the American Bottoms Treatment Plant (ABTP) performs specific analytical work as required in a number of areas including NPDES permit compliance, establishment of user contributions/surcharges, operational monitoring, pretreatment and special investigations. NPDES permit requirements involve sampling, analysis, and the reporting of analytical results for several influent points and the effluent stream. Some large dischargers are subject to BOD and Suspended Solid surcharges. Analytical work for this determination is performed by the ABTP laboratory. Data provided by the analytical laboratory is also used by plant operators to evaluate the treatment process performance and to make

adjustments where necessary. Effluent quality of some industrial discharges is monitored by ABTP to document the effectiveness of the individual pretreatment programs. Special investigations which are targeted at problem solving and identification of possible pollutant sources, as well as those which involve the identification and resolution of interferences or other factors that adversely affect the analytical results, are also conducted.

The laboratory space consists of the main lab where the majority of the analytical work is performed; the chemists' office which houses lab files, analytical data sheets, a personal computer, and a small reference library; the instrumentation area containing the atomic absorption and mercury analysis instrumentation; the wash and dirty lab areas used for washing lab glassware and sample bottles; a utility room containing a refrigerator and autoclave; and the gas-liquid chromatograph (GLC) lab.

2. Sampling Methods/Schedule -- Samples are routinely taken from locations both within the treatment plant boundaries and in outlying areas. Depending on the type of analysis, composite and/or grab samples are obtained from these locations. Locations requiring composite samples are supplied with refrigerated compartments to hold the sample at a temperature of 4°C. Grab samples are taken and delivered immediately to the lab for analysis or proper preservation and storage when allowable and necessary for scheduling purposes. Table 4 summarizes the location and types of samples collected on a daily basis by American Bottoms personnel.

Due to its voluminous nature, these data have not been included in this report. However, the data are tabulated monthly by ABTP and these data summaries are available.

Additional sampling and testing are conducted on an as needed basis for the purpose of special investigations. The P-Chem plant collects 24-hour composite samples from the various industries in Sauget on a daily basis. Since October 1988, the samples have been retained for thirty days or more so that in the event of a high loading or excursion in the American Bottoms plant, the samples obtained from the suspected industries can then be

TABLE 4

PARAMETERS ANALYZED DAILY BY AMERICAN BOTTOMS REGIONAL LABORATORY

C = Composite G = Grab

Parameter	CAK	ESL	PI	PCE	P/CI	P/CE	PE	ML	RAS	SP	TS	FL	FC
Total Solids										C	C	G	C
Total Volatile Solids										C	C	G	C
Total Suspended Solids	C	C	C	C	C	C	C	C,G	C,G				
Volatile Suspended Solids	C	C	C	C	C	C	C	C	C				
Settleable Solids	C	C	C	C			C	C					
CBOD,							C						
BOD,	C	C	C	C	C	C	C						
TOC				C	C	C	C						
pH	C	C	C	C	C	C,G	C,G	C			C		C
Oil & Grease							G						
Ammonia as Nitrogen	C	C	C	C	C	C	C						
Nitrate as Nitrogen								C					
Alkalinity				C		C	C,G						
Chlorine Residual							G						
Fecal Coliform							G						
Phenolics					C		C	C					
Color				C		C	C						
Cadmium					C	C	C						
Chromium					C	C	C						
Copper					C	C	C						
Iron				C	C	C	C						
Lead					C	C	C						
Mercury							C						
Nickel					C	C	C						
Zinc					C	C	C						
Carbon								C					

Designation	Sample Location
CAK	Cahokia Pump Station
ESL	East St. Louis Pump Station
PI	Primary Influent
PCE	Primary Clarifier Effluent
P/CI	P-Chem Plant Influent
P/CE	P-Chem Plant Effluent
PE	Plant Effluent
ML	Mixed Liquor
RAS	Return Activated Sludge
SP	Thickener Overflow at Screw Pump
TS	Thickened Sludge
FL	Filtrate
FC	Filter Cake

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analyzed by the ABTP Laboratory to determine possible sources of particular pollutants.

3. Parameters Analyzed -- As previously noted, the parameters analyzed by the ABTP analytical lab are those required by the NPDES permit and those providing information about the functioning of the plant. The parameters which are analyzed on a regular basis have been listed in Table 4. When the need for special investigations is warranted, additional parameters are analyzed. USEPA has issued a list of acceptable analytical procedures for various parameters, compounds, and elements in 40 CFR 136.3 (7-1-87). The analytical procedures used in the ABTP laboratory are USEPA approved, are referenced in 40CFR 136.3, and have been adapted primarily from publication EPA600/4-79-020.

4. Data Quality -- Every aspect of the sampling and analysis program is subject to quality control. Lab employees are educated about the importance of quality control. Equipment maintenance schedules are established, and logs are kept which indicate instrument calibrations, problems, and performed maintenance. These help to verify that all equipment is working and adjusted correctly. Internal quality control checks have been developed which include the use of replicates, blind and standard spiked samples, internal standards, blanks, calibration standards, blind samples, control charts, quality control samples and reagent checks. Work quality in the sampling and analytical programs is evaluated through control charts which monitor the performance of instruments, methods, the chemist/technician, and the whole laboratory by the analysis of standard or controlled solutions. Outside quality monitoring programs are also used whereby the laboratory is supplied with certified solutions of specific concentration which are inserted in the sampling sequence. Additional information about the quality control program can be found in the ABTP manual Laboratory Procedures and Quality Control, dated May 31, 1989.

C. POTW Random Sampling Programs

1. Phenols Sampling Program -- Sampling personnel associated with the Pretreatment Program collected grab samples and formed daily composites over an approximate eight (8) hour period during each of eight (8) days of a thirty (30) day period. These samples were collected from ten (10) different monitoring locations within the Village of Sauget which included: P-Chem Influent, Clayton Chemical, Trade Waste Incineration, Monsanto Company, Midwest Rubber, Cerro West, Cerro East, the Village of Sauget (Monitoring Location), Ethyl Petroleum, and Big River Zinc. This sampling program was conducted on July 27 and 31, August 2, 6, 10, 14, 16, and 20, 1988. One of the sampling days in each week was an alternating Saturday or Sunday of that particular week. The sampling was generally performed on Tuesday and Saturday, or Wednesday and Sunday, in an alternating sequence during the month long sampling period.

Sampling was conducted in a continuous sampling cycle in which four to five grab samples were taken at each monitoring location during the sample day. The samples were composited in glass containers that were kept cold in iced containers. At the end of each sampling day, all of the sample containers were taken to the American Bottoms laboratory where American Bottoms personnel preserved and stored the samples until the next day during which the actual testing was performed.

The collection, preservation and sampling procedures were in accordance with USEPA requirements. In addition to analytical testing for phenols, tests for ammonia, cadmium, pH, and TOC were also conducted on these samples.

2. Initial Pollutant Screening -- As a requirement of their wastewater discharge permit, each Significant Industrial User (SIU) was required to conduct sampling and submit analytical reports as part of the Initial Pollutant Screening program. This requirement was in addition to the SIU compliance monitoring requirements of their permits.

The Initial Pollutant Screening (IPS) included comprehensive sampling and testing for priority organic pollutants, metals, cyanide, phenols, and conventional pollutants. The sampling frequency and type of parameter analysis performed by each SIU is outlined as follows:

Industrial User	Priority Organic Sampling Frequency	Conventional, Metals, etc. Sampling Frequency	Month (1988) Aug.	Sept.	Oct.	Dec.
Big River Zinc	once/month	once/week	x	-	x	x
Cerro Copper	once/month	once/week	x	-	x	x
Ethyl Petroleum	once/month	once/week	x	-	x	x
Monsanto	once/month	once/week	x	-	x	x
Pfizer	once/month	once/week	x	-	x	x
Midwest Rubber	once/month	once/week	x	-	x	-
Lanchem	once/month	once/month	-	x	x	-
Musick Plating	once/month	once/month	x	-	x	-

"x" indicates sampling was required

Since all of the analysis relating to the IPS was performed by independent certified laboratories, these data have been included as part of the POTW Random Sampling program as suggested in USEPA's Guidance Manual for POTW Pretreatment Program Development (References at No. 43) which encourages the incorporation of industrial self-monitoring as an integral part of the overall monitoring program.

3. Additional Sampling by Gulf Coast -- Sampling of SIU's and selected other industrial users was authorized by ABTP and conducted by Gulf Coast Laboratories, Inc. in February, March, and April 1989. Samples were analyzed for conventional, metallic, and priority organic pollutants as indicated in Table 2 for ABTP wastewater samples. Library searches were conducted for non-priority organics as well.

4. Additional Sampling by American Bottoms -- Sampling of SIU's and selected other industrial users was also conducted by American Bottoms and other Pretreatment Program personnel in February, March and April 1989 to supplement and complement the Random Sampling conducted by Gulf Coast Laboratories, Inc. These samples were analyzed by Gulf Coast for the same parameters as those samples collected by Gulf Coast.

In addition, samples were collected and analyzed by American Bottoms personnel in April, May and June 1989 for various metals, cyanide, and oil and grease at Big River Zinc, Cerro Copper, and Musick Plating.

The results of all random sampling as described in this Sub-Section C are provided in Appendix F.

III. FATE AND EFFECT ANALYSIS

A. Identification of Limiting Criteria

In determining those parameters which should be limited, consideration must be given to four general areas in which presence of pollutants may have the potential to present problems. These areas include meeting the requirements of operating permits, maintaining the water quality of the receiving stream, maintaining concentration levels that are not inhibitory to plant operations, maintaining the sludge quality, and other general plant operational considerations.

1. NPDES Limited Parameters -- The American Bottoms Regional Wastewater Treatment Facility (ABRWTF) operates under NPDES Permit No. IL 0065145. Under this permit, the monthly average and daily maximum concentrations of several parameters present in the effluent are limited. These parameters and their limits are presented in Table 5.

2. Effluent Parameters Limited by Water Quality Criteria -- Section 304(a) (1) of the Clean Water Act requires the United States Environmental Protection Agency (USEPA) to publish and periodically update ambient water quality criteria. These criteria reflect the latest scientific knowledge on the kind and extent of identifiable effects on health, welfare, and recreation which may be expected from the presence of pollutants in a body of water, on the concentration and dispersal of pollutants or their byproducts through biological, physical, and chemical processes, and on the effects of pollutants on biological community diversity, productivity, and stability. These criteria also include information on the factors affecting rates of organic and inorganic sedimentation for varying types of receiving waters. These criteria are not rules and they do not have regulatory impact. Rather, these criteria present scientific data and guidance on the environmental effects of pollutants which can be useful to derive regulatory requirements based on considerations of water quality impacts. For this reason, when used, these values should be considered speculative.

TABLE 5

PARAMETERS LIMITED BY AMERICAN BOTTOMS NPDES PERMIT

	CONCENTRATION LIMITS mg/l		
	MONTHLY AVG.	WEEKLY AVG.	DAILY MAX.
American Bottoms Regional Treatment Facility effluent:			
BOD,	20		40
Suspended Solids	25	45	50
Fecal Coliform	Daily Maximum shall not exceed 400 per 100 ml.		
pH	Shall be in the range of 6 to 9 Standard Units		
Chlorine Residual	0.75		
Copper (total)	0.5		1.0
Mercury (total)	0.0005		0.0010
Lead (total)	0.2		0.4
Zinc (total)	1.0		2.0
Nickel (total)	1.0		2.0
Iron (total)	2.0		4.0
Oils, Fats and Greases	15.0		30.0
Phenolics	0.3		0.6
Cadmium	0.15		0.30
Chromium (total)	1.0		2.0

Parameters found in the ABTP effluent were matched against criteria identified in the current EPA document Quality Criteria for Water 1986 (the "Gold Book", References at No. 41). For the most part, acute and chronic criteria were identified. In some cases, the indicated criteria were identified as Lowest Observable Effect Levels (LOEL), and these were treated as acute toxicity levels as stated without adjustment by uncertainty factors as discussed below.

Unlike criteria, standards are rules, and, as such, have regulatory impact. Illinois General Use Standards exist for a number of parameters. Currently, the IEPA has proposed revisions to the Illinois General Use Standards which are the subject of a rule making proceeding pending before the Illinois Pollution Control Board, docketed as R88-21. Included within the IEPA's proposed, revised standards, are numeric acute and chronic standards based on acute and chronic toxicity, respectively, for certain parameters. These proposed revisions to the Illinois General Use Standards are not of any legal effect prior to their adoption by the Illinois Pollution Control Board, and are currently subject to further revision prior to their adoption. Therefore, the proposed R88-21 regulations have been referred to only as an additional source of relevant technical information and of potential future legislative changes. Generally, however, the proposed Illinois numeric acute and chronic standards are identical to Federal Water Quality Criteria identified in the "Gold Book".

Acute toxicity is the capacity of a substance to cause mortality or other irreversible effects in an organism as a result of a single or short-term exposure to the substance. Chronic toxicity is the capacity of a substance to cause an injurious or debilitating effect in an organism as a result of exposure over a time period representing a substantial portion of the natural life-cycle of the organism. According to the Proposed Illinois General Use Standards, the acute standard shall not be exceeded at any time except in a zone of initial dilution (ZID) and the chronic standard shall not be exceeded outside the established mixing zone.

EA Engineering, Science, and Technology, Inc., (EA) also performed a data search to identify additional toxicity endpoints for those parameters not covered by the Federal or State criteria. The data search was primarily limited to freshwater species of fish, though other freshwater data on algae and macroinvertebrates were also considered. Their sources included "Acute Toxicity of Organic Chemicals to Fathead Minnows (Pimephales promelas)", Volumes 1-3 (References at No. 51), the Aquatic Information Retrieval (ACQUIRE) Computer Database (References at No. 31), and Handbook of Environmental Data on Organic Chemicals (References at No. 52).

For the compounds with available toxicity data, the estimated lowest acute and chronic effect levels were calculated employing "uncertainty factors" of 10 and 100 respectively. This approach is based on the Technical Support Document for Water Quality-Based Toxics Control (References at No. 42) in which USEPA recommends using a factor of 10 to account for differences in species sensitivity to toxicants and a second factor of 10 to account for differences between acute and chronic effect levels.

For this data evaluation, an uncertainty factor of 10 was used to determine an estimated lowest acute effect level from an acute toxicity data point (i.e., LC50 or equivalent divided by 10). An uncertainty factor of 100 (10 for species sensitivity x 10 for acute to chronic toxicity) was used to determine an estimated lowest chronic effect level from an acute toxicity data point (i.e., LC50 or equivalent divided by 100). When chronic toxicity data were available for a specific chemical, these data were compared to corresponding acute toxicity data adjusted by the appropriate uncertainty factors, and the lower value reported. It is the professional opinion of EA Engineering, Science, and Technology, Inc. that these uncertainty factors are reasonable and are not under protective or overly conservative.

The lowest toxicity levels for the compounds with identified toxicity data, with the exception of boron, were primarily 24-, 48-, or 96-hour LC50 values. However, due to the small amount of available data, several 7-day LC50 values were used as well. The lowest toxicity levels identified in the literature were adjusted by the appropriate uncertainty factor to calculate estimated lowest acute or chronic effect levels. For boron, the only toxicity level identified was a maximum acceptable toxicant concentration (MATC) derived during a chronic (21 day) study. This value was considered protective of acute toxicity and therefore, no uncertainty factor was used. However, to account for differences in species sensitivity, the MATC was divided by a factor of 10 to estimate a lowest chronic effect level. A copy of the EA report Levels of Toxicity to Aquatic Organisms for Compounds Identified in American Bottoms Influent and Effluent is provided as Appendix G.

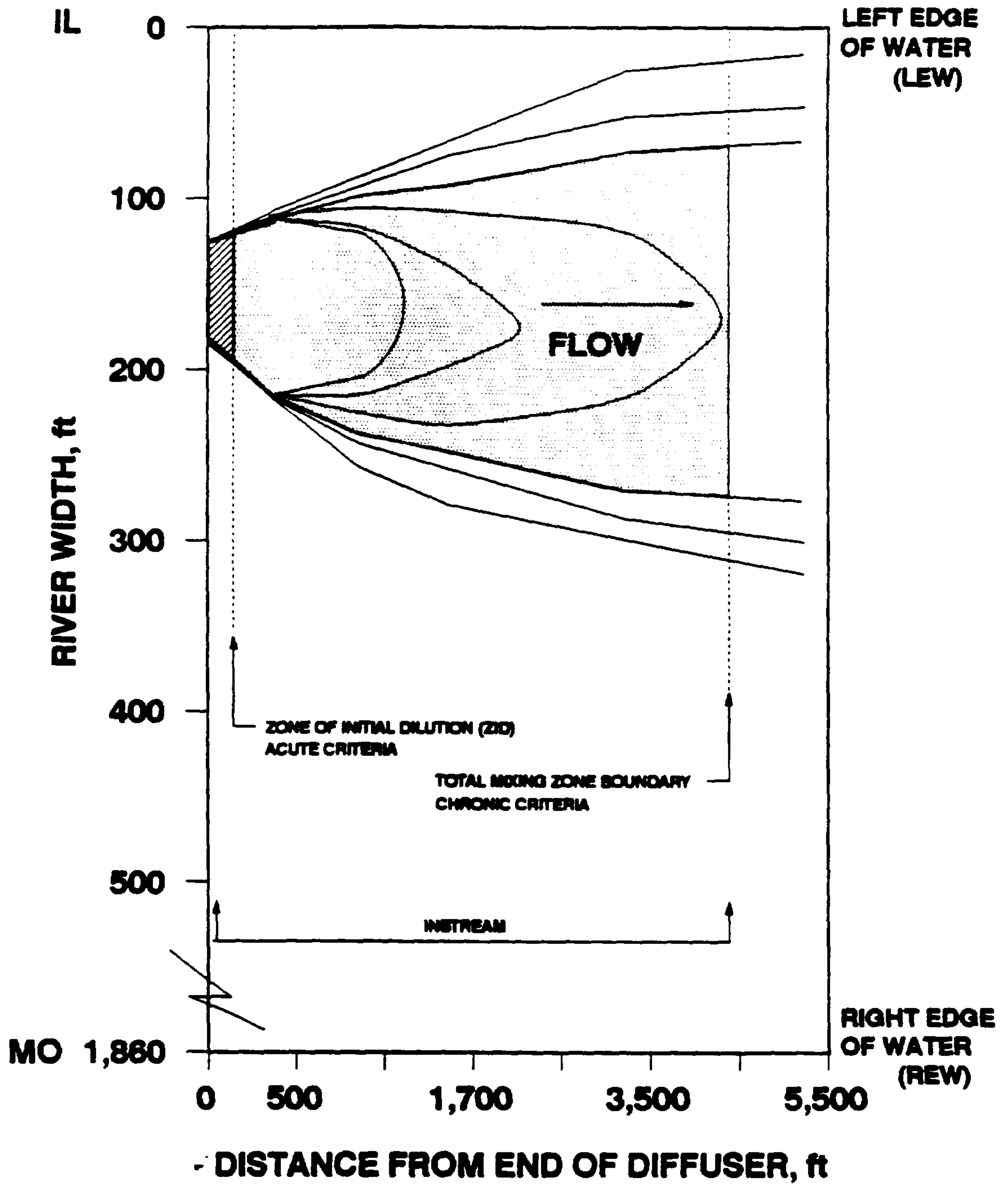
Acute toxicity criteria/standards are concentrations which must not be exceeded outside of a zone of initial dilution. Chronic toxicity criteria/standards are concentrations which must not be exceeded outside of the total mixing zone. Figure 3 illustrates the boundaries of these areas as determined from modeling performed by The Advent Group (References at No. 2). Based on this modeling, it is estimated that a dispersion factor of 78:1 is attainable in the ZID and a dispersion factor of 369:1 is attainable in the total mixing zone.

The estimated lowest acute and chronic effect levels derived from the lowest toxicity level and U.S. EPA LOEL or water quality criteria are summarized in Table 6 for those parameters with available toxicity data. Also included in Table 6 are dispersion factors that would be required to achieve the estimated acute and chronic levels shown. For the determination of the required dispersion factors, acute standards/criteria were compared to maximum effluent concentrations, and chronic standards/criteria were compared to average effluent concentrations.

A comparison of the most restrictive acute and chronic criteria/ standards as related to detection limits was conducted in order to identify those parameters which had criteria/standards that fell below method detection limits.

The following parameters had most restrictive acute criteria/standards which fell below method detection limits. As in Table 6, the maximum

PLUME DIMENSIONS



CONCEPTUAL DEFINITION OF ZID AND MIXING ZONE FOR PROPOSED AB DIFFUSER

THE ADVENT GROUP, INC.

FIGURE 3

CER 055425

~~EPA/CERRO COPPER/DIL/PGD ATTORNEY WORK PRODUCT / ATTORNEY CLIENT PRIVILEGE~~

TABLE 6

POTENTIAL POLLUTANTS OF CONCERN BASED ON NPDES, FEDERAL, STATE OR TOXICITY BASED CRITERIA AND STANDARDS, AND THEIR REQUIRED DILUTION

Parameter	Units	NPDES Permit Monthly Average	NPDES Permit Daily Maximum	Federal Water Quality Criteria Acute Criteria (1)	Federal Water Quality Criteria Chronic Criteria (2)	Illinois General Use Chronic Standards (2)	Toxicity-Based Criteria Acute Criteria (3)	Toxicity-Based Criteria Chronic Criteria (4)	Most Restrictive Acute Standard or Criterion (5)	Maximum Plant Effluent Concentration (6)	Dispersion Required in ZID (8)	Most Restrictive Chronic Standard or Criterion (9)	Average Plant Effluent Concentration (10)	Dispersion Required in Mixing Zone (11)
Acetone	ug/l	--	--	--	--	--	1,000	100	1,000	230	<1:1	10[illegible]	48	<1:1
Alachlor	ug/l	--	--	--	--	--	467	47	467	67	<1:1	47	7.3	<1:1
Aniline	ug/l	--	--		--	--	10	1	10	1,700	[illegible]70:1	1	240	240:1
Arsenic, Total	mg/l	--	--	1.21 (13)	0.67 (13)	1.0	--	--	1.21	0.13	<1:1	0.67	0.025	<1:1
Arsenic (III)	mg/l	--	--	36	0.19	--	--	--	0.36	0.13 (13)	<1:1	0.19	0.067 (13)	<1:1
Arsenic (V)	mg/l	--	--	85	0.48	--	--	--	0.85	0.13 (13)	<1:1	0.48	0.067 (13)	<1:1
Atrazine	ug/l	--	--	--	--	--	72	7.2	72	200	2.78:1	7.2	18.0	2.50:1
Barium	mg/l	--	--	--	--	5.0	--	--	--	0.077	--	5.0	0.047	<1:1
Benzene (20)	ug/l	--	--	5,300	--	--	--	--	5,300	950	<1:1	--	150	--
Biochemical Oxygen Demand	mg/l	20	40	--	--	--	--	--	--	72 (7)	--	--	[illegible]0 (7)	--
Bis(2 Ethylhexyl)Phthalate (20)	ug/l	--	--	940	3	--	--	--	940	43	<1:1	3	12	4:1
Boron	mg/l	--	--		--	1.0	9.3	0.93	9.3	2.05	<1:1	0.93	0.5	<1:1
2 Butanone	ug/l	--	--		--	--	322,000	32,200	322,000	91	<1:1	32,200	13.0	<1:1
Butoxyethoxyethanol	ug/l	--	--	--	--	--	115,000	11,500	115,000	95	<1:1	11,500	7.9	<1:1
Butylbenzylphthalate	ug/l	--	--	940	3	--	--	--	940	0	<1:1	3	0	<1:1
Cadmium	mg/l	0.15	0.30	0.0086 (12)	0.002 (12)	0.05	--	--	0.0086	0.100 (7)	[illegible]53:1	0.002	<0.005 (7)	<2.50:1 (7)
Chlorides	mg/l	--	--	860	230	500	--	--	860	1,600	[illegible]36:1	230	1,[illegible]30	4.78:1
4 Chloroaniline	ug/l	--	-	--	--	--	240	24	240	1,600	[illegible]67:1	24	[illegible]50	6.25:1
Chlorobenzene (20)	ug/l	--	-	250	50	--	--	--	250	760 (15)	[illegible]04:1	50	230 (15)	4.60:1
Chloroform (20)	ug/l	--	-	28,900	1,240	--	--	--	28,900	18	<1:1	1,240	6.3	<1:1
Chloronitrobenzene	ug/l	--	-	--	--	--	120	12	120	810	[illegible]75:1	12	[illegible]70	39.17:1
2 Chlorophenol	ug/l	--	-	4,300	2,000	--	--	--	4,300	37	<1:1	2,000	13	<1:1
Chromium, Trivalent	mg/l	--	--	3.1 (12)	0.37 (12)	1.0	--	--	3.1	0.026	<1:1	0.370	0.008	<1:1
Chromium, Hexavalent	mg/l	--	--	0.016	0.011	0.05	--	--	0.016	0.0	<1:1	0.011	0.0	<1:1
Chromium, Total	mg/l	1.0	2.0	3.116 (14)	0.381 (14)	1.05 (14)	--	--	3.116	0.09 (7)	<1:1	0.381	0.01 (7)	<1:1
Copper	mg/l	0.5	1.0	0.034 (12)	0.021 (12)	0.02	--	--	0.034	0.740 (7)	2[illegible]76:1	0.02	0.18 (7)	9.00:1
Cyanides (20)	mg/l	--	--	0.022	0.0052	0.025	--	--	0.022	0.030	[illegible]36:1	0.0052	0.016	3.08:1
Di-n-butylphthalate (20)	ug/l	--	--	940	3	--	--	--	940	1	<1:1	3	0.083	<1:1
Dichlorobenzenes, Total	ug/l	--	-	1,120	763	--	--	--	1,120	135 (16)	<1:1	763	63 (16)	<1:1
1,2-Dichlorobenzene (20)	ug/l	--	--	--	--	--	--	--	--	79	--	--	37	--
1,3-Dichlorobenzene (20)	ug/l	--	-	--	--	--	--	--	--	0	--	--	0	--
1,4 Dichlorobenzene (20)	ug/l	--	--	--	--	--	--	--	--	56	--	--	26	--
Dichlorobenzene (Isomer Unspecified) (17)	ug/l	-	--	--	--	--	--	--	1,120	340 (17)	<1:1	763	150 (17)	<1:1
Ethylbenzene (20)	ug/l	--	--	32,000	--	--	--	--	32,000	120	<1:1	--	23	--
Fluoride	mg/l	--	--	--	--	1.4	12.5	1.25	12.5	14	[illegible]12:1	1.25	4.03	3.22:1
Iron	mg/l	2.0	4.0	--	1.0	1.0	--	--	--	1.55 (7)	--	1.0	0.28 (7)	<1:1
Lead (20)	mg/l	0.2	0.4	0.200 (12)	0.0077 (12)	0.1	--	--	0.200	0.14 (7)	<1:1	0.0077	0.009 (7)	1.17:1
Manganese	mg/l	-		--	--	1.0	None Identified		--	0.6	--	1.0	0.310	<1:1
Mercury	mg/l	0.0005	0.001	0.0024	0.00012	0.0005	--	--	0.0024	0.0	<1:1	0.00012	0	<1:1
Methylene Chloride (20)	ug/l	-	-	11,000	--	--	--	--	11,000	180	<1:1	--	46	--
4 Methyl-2-Pentanone	ug/l	-		--	--	--	46,000	4,600	46,000	100	<1:1	4,600	8.3	<1:1
Naphthalene (20)	ug/l			2,300	280	--	--	--	2,300	20	<1:1	280	2.2	<1:1
Nickel	mg/l	1.0	2.0	2.5 (12)	0.620 (12)	1.0	--	--	2.5	0.78 (7)	<1:1	0.62	0.18 (7)	<1:1
4 Nitroaniline	ug/l		--	--	--	--	2,400	240	2,400	2,800	[illegible]17:1	240	560	2.33:1
Nitrobenzene (20)	ug/l	-	-	27,000	--	--	--	--	27,000	25	<1:1	--	9.4	--

TABLE 6 (CONTINUED)

POTENTIAL POLLUTANTS OF CONCERN BASED ON NPDES, FEDERAL, STATE OR TOXICITY BASED CRITERIA AND STANDARDS, AND THEIR REQUIRED DILUTION

Parameter	Units	NPDES Permit Monthly Average	NPDES Permit Daily Maximum	Federal Water Quality Criteria Acute Criteria (1)	Federal Water Quality Criteria Chronic Criteria (2)	Illinois General Use Chronic Standards (2)	Toxicity-Based Criteria Acute Criteria (3)	Toxicity-Based Criteria Chronic Criteria (4)	Most Restrictive Acute Standard or Criterion (5)	Maximum Plant Effluent Concentration (6)	Dispersion Required in ZID (8)	Most Restrictive Chronic Standard or Criterion (9)	Average Plant Effluent Concentration (10)	Dispersion Required in Mixing Zone (11)
Nitrophenols	ug/l	--		230	150	--	--	--	230	1,400 (18)	6 09:1	150	640 (18)	4 27:1
2 Nitrophenol (20)	ug/l	--		--	--	--	--	--	--	1,400	--	--	150	--
4 Nitrophenol (20)	ug/l	-		--	--	--	--	--	--	1,300	--	--	450	--
Oil & Grease	mg/l	15 0	30 0	--	--	--	--	--	--	20 0	--	--	6 0	--
Phenol (20)	ug/l	--	--	10,200	2,560	--	--	--	10,200	0	<1:1	2,560	0	<1:1
Phenolics	mg/l	0 3	0 6	--	--	0 1	--	--	--	0 24	--	0 1	0 16	1 60:1
Selenium	mg/l	--	--	0 020	0.005	1 0	--	--	0.020	0.0	<1:1	0 005	0.0	<1:1
Silver	mg/l	--	--	0 013 (12)	0.0012 (12)	0.005	--	--	0.013	0.0	<1:1	0 0012	0 0	<1:1
Sulfates	mg/l	--	--	--	--	500	--	--	--	1,100	--	500	900	1.80:1
Toluene (20)	ug/l	--	--	17,500	--	--	--	--	17,500	4	<1:1	--	0 75	--
Total Dissolved Solids	mg/l	--	--	--	--	1,000	--	--	--	3,700	--	1,000	3,000	3 00:1
Total Suspended Solids	mg/l	25 0	50 0	--	--	--	--	--	--	50 (7)	--	--	11 (7)	--
1,1,1 Trichloroethane (20)	ug/l	--	--	18,000	--	--	--	--	18,000	27	<1:1	--	2 8	--
Trichloroethene (20)	ug/l	--		45,000	21,900	--	--	--	45,000	8	<1:1	21,900	0 67	<1:1
Xylenes	ug/l	--	--	--	--	--	--	--	--	480	--	--	140	--
o-Xylene	ug/l	--	--	--	--	--	1,300	130	1,300	-- (19)	<1:1	130	-- (19)	1.08:1
m-Xylene	ug/l	--	--	--	--	--	920	92	920	-- (19)	<1:1	92	-- (19)	1 52:1
p Xylene	ug/l	--	--	--	--	--	200	20	200	-- (19)	2.40:1	20	-- (19)	7 00:1
Zinc (20)	mg/l	1 0	2 0	0 210 (12)	0.190 (12)	1 0	--	--	0.210	3.36 (7)	16 00:1	0.19	0 32 (7)	1 68:1

NOTES.

(1) An acute standard/criterion is the maximum concentration of a given parameter allowable outside the zone of initial dilution (ZID).

(2) A chronic standard/criterion is the maximum concentration of a given parameter allowable outside the mixing zone.

(3) The toxicity-based acute criterion was determined by dividing the minimum identified LC50 value for a given parameter by an uncertainty factor of ten (10).

(4) The toxicity-based chronic criterion was determined by dividing the minimum identified LC50 value for a given parameter by an uncertainty factor of one hundred (100).

(5) The most restrictive acute standard or criterion is the minimum value of the acute standards and/or criteria shown.

(6) The maximum effluent concentration is the maximum value for the ABTP Final Effluent identified in the Gulf Coast sampling unless otherwise indicated.

(7) Based on AB sampling data.

(8) Dispersion required in the ZID is determined by dividing the maximum plant effluent concentration by the most restrictive acute standard or criterion. This value is then compared to the dispersion which is achievable in the zone of initial dilution, in this case, 78:1. Those parameters with a required dispersion ratio greater than 78:1 were considered for local discharge limitations.

(9) The most restrictive chronic standard or criterion is the minimum value of the chronic standards and/or criteria shown.

(10) The average effluent concentration is the twelve-month average value for the ABTP Final Effluent in the Gulf Coast sampling unless otherwise indicated.

(11) Dispersion required in the mixing zone is determined by dividing the average plant effluent concentration by the most restrictive chronic standard or criterion. This value is then compared to the dispersion which is achievable in the mixing zone, in this case, 369:1. Those parameters with a required dispersion ratio greater than 369:1 were considered for local discharge limitations.

(12) Hardness dependent criterion. Hardness of 200 mg/l as $CaCO_3$ was used based on Mississippi River historical data.

(13) Federal Water Quality Criteria were identified for trivalent and pentavalent arsenic independently, but not for total arsenic. Analyses conducted in the sampling program were for total arsenic only. In the interest of thoroughness, total arsenic values were compared to the sum of the pentavalent and trivalent criteria, as wells as to the individual criteria identified for each, as if the total arsenic detected were pentavalent or trivalent. In all cases, the required dispersion was less than 1:1.

(14) Federal Water Quality Criteria were identified for trivalent and hexavalent chromium independently, but not for total chromium. The Federal Water Quality Criterion shown for total chromium is actually the sum of the criteria for trivalent and hexavalent chromium.

(15) Only volatile scan data was utilized in the calculation of the average and maximum effluent concentration for chlorobenzene. The semivolatile library search also picked up a compound tentatively identified as chlorobenzene, but was considered less reliable than the data provided by the volatile scan.

(16) Water quality criteria were identified only for total dichlorobenzene. The isomers 1,2-, 1,3-, and 1,4-dichlorobenzene were analyzed independently. The sum of the maximums and averages of these isomers were compared to the criteria for total dichlorobenzenes.

(17) Various dichlorobenzene compounds were tentatively identified in the library search, but listed only as "Dichlorobenzene." It is unknown what isomers are represented by these listings, so for the purpose of comparisons to Federal Water Quality Criteria, the total of all the unspecified dichlorobenzenes was calculated for each month, and the average and maximum were calculated from these totals.

(18) Federal Water Criteria were identified only for total nitrophenols. The isomers 2- and 4-nitrophenol were analyzed independently. The total nitrophenols for each month were calculated by summing the 2- and 4-nitrophenol detected. The maximum and average were calculated based on these sums and compared to the applicable criteria.

(19) Toxicity based criteria were identified for ortho-, meta-, and para-xylene; however, the analysis as performed detected total xylenes. The maximum and average total xylenes were compared to the acute and chronic criteria, respectively, for each isomer as if the total consisted entirely of that isomer.

(20) Parameter having an OCPSF pretreatment limitation.

detected effluent concentration was compared to the acute criterion and the required dispersion was calculated. If the parameter was never detected in the effluent, the method detection limit (MDL) was substituted for the maximum. These parameters and their required dispersion factors follow.

Parameter	Most Restrictive Acute Criterion	Maximum Effluent Concentration	Required Dispersion
Aniline	10 ug/l	1700 ug/l	170.0:1
Chromium, hexavalent	0.016 mg/l	MDL 0.02 mg/l	1.3:1
Silver	0.013 mg/l	0.093 mg/l	7.2:1

For those parameters which had a most restrictive chronic criterion which fell below the method detection limit, the average effluent concentration was recalculated substituting the detection limit for the instances in which the parameter was undetected. This gave an adjusted average that represented the greatest value the average could possibly have based on the sampling results. This adjusted average was then compared to the most restrictive chronic criterion/standard to determine the dispersion of the effluent which would be required to achieve the chronic criterion/ standard. These parameters and their required dispersion factors follow.

Parameter	Most Restrictive Chronic Criterion	Average Effluent Concentration	Required Dispersion
Aniline	1 ug/l	250 ug/l	250.0:1
Atrazine	7.2 ug/l	18 ug/l	2.5:1
Bis(2-Ethylhexyl)phthalate	3 ug/l	15 ug/l	5.0:1
Butylbenzylphthalate	3 ug/l	MDL 10 ug/l	3.3:1
Cadmium	0.002 mg/l	MDL 0.004 mg/l	2.0:1
Chromium, hexavalent	0.011 mg/l	MDL 0.02 mg/l	1.8:1
Copper	0.02 mg/l	0.029 mg/l	1.5:1

Cyanides	0.0052 mg/l	0.023 mg/l	4.4:1
Di-n-butylphthalate	3 ug/l	MDL 10 ug/l	9.3:1
Mercury	0.00012 mg/l	0.0002 mg/l	1.7:1
Silver	0.0012 mg/l	0.035 mg/l	29.2:1

As can be seen from this data, the only parameter for which the required dispersion factor exceeds 78:1 for acute criteria or 369:1 for chronic criteria is aniline. Aniline has been previously identified in Table 6 as requiring a dispersion factor greater than 78:1 for acute criteria. In essence, even though some criteria/standards fall below method detection limits, based on the sampling performed, the achievable dispersions are sufficient to control these parameters to the most restrictive acute and chronic levels.

In order to evaluate the bioaccumulative potential of compounds in the receiving stream, EA Engineering, Science, and Technology, Inc. and The Advent Group, Inc. performed data searches to identify bioconcentration factors (BCF's) or log octanol-water partition coefficients (log P's) for those compounds detected in any of the ABTP sampling locations. The data identifying the BCF's and/or log P's for such compounds are also contained in Appendix G.

The determination of bioaccumulative potential was based on two criteria, either of which called for its further evaluation relative to human health-based water quality criteria. The first criterion relates to the log P value identified. Specifically, USEPA recommends "that any compound for which the logarithm of the partition coefficient (log P) is greater than 3.5 be flagged for further evaluation and possible control" (References at No. 42). The second criterion relates to the bioconcentration factor (BCF) identified. An equation developed by Veith, et al. (References at No. 42 and at No. 53) relating bioconcentration factors to log P values identifies that a log P value of 3.5 is approximately equivalent to a BCF of 188. Compounds with a BCF identified as greater than 188 were also flagged for further evaluation.

As will be recalled from Section II.A.3, a variety of parameters were deemed to have insufficient or inadequate data for the purposes of the development of local industrial limits. However, for the parameters identified in footnotes 2c, 2d, 3, and 4 (Section II), based on the reasons therein stated, an evaluation of the potential bioaccumulativeness of these parameters was performed prior to dismissing them from further consideration. The determination of bioaccumulative potential for these parameters was also based on identified log P's > 3.5 or BCF > 188 as stated above.

For those parameters for which no log P or BCF was found, The Advent Group, Inc. estimated the log P based on the solubility of the compound in water. This calculation was made using an equation presented in Vershueren, (References at No. 52) as follows: $\log P = 4.5 - 0.75 \log S$; where S = solubility in mg/l. Generally, this gave a log P greater than 3.5 when the solubility of the compound was less than 21 or 22 mg/l. Those compounds with a calculated log P greater than 3.5 were further evaluated as discussed below. If a parameter had no readily identifiable log P, BCF, or solubility value, it was considered potentially bioaccumulative if it was present in the sludge. This is the basis for the inclusion of 2-Methylheptane, 3-Methylheptane, and Tetradecanoic Acid in the evaluation of bioaccumulative potential as discussed below.

Following the identification or estimation of log P and BCF values, or evaluation of presence in sludge if no log P or BCF was identified, those parameters flagged for further evaluation (BCF > 188 or log P > 3.5, or if no log P or BCF was identified, presence in sludge) were compared to health-based limits in accordance with guidance offered by the Technical Support Document for Water Quality Based Toxics Control (References at No. 42). To calculate the chronic concentration of the substance in the receiving water, the 90th percentile ABTP final effluent concentration for each potentially bioaccumulative compound was first identified, or if the compound was never detected in the ABTP final effluent, the method detection limit (MDL) was identified. This value was first multiplied by the average effluent flow (25.65 cfs), then divided by a low flow estimate, in this case, the seven day - ten year (7Q10) low flow for the Mississippi River (45,970 cfs according to the Illinois Geological Survey). This calculated chronic concentration was then compared to a human health-based limit identified from the following sources:

U.S. EPA	Water Quality Criteria for fish and water consumption. (References at No. 41.)
U.S. EPA	Health Advisories for drinking water lifetime exposure. (References at No. 34, No. 35, and No. 36.)
U.S. EPA	Recommended Drinking Water limits from OHMTADS, IRIS, or CESARS databases. (References at No. 21, No. 28, and No. 30.)
U.S. EPA	Multimedia Environmental Goals for Environmental Assessment, water ambient level goals based on health effects. (References at No. 29.)
NAS	Drinking Water and Health, suggested no-adverse effect levels. (References at No. 16.)

Those compounds for which the 90th percentile effluent value (or MDL) divided by the 7Q10 exceeded the human health based criterion or LTHA were identified for possible identification as pollutants of concern. These comparisons are provided in Table 7.

As can be seen from the data presented in Table 7, six parameters have been identified as potential pollutants of concern based on their potential bioaccumulativeness. These parameters, Aldrin, 4'4'-DDD, 4'4'-DDT, Heptachlor, Phenanthrene, and Chlordane, will be further evaluated in Section IV. The remaining parameters identified under footnotes 2cY, 2dY, 3b, and 4Y in Section II have been eliminated from further consideration for the development of local limits as, other than for the evaluation of bioaccumulative potential, the data were insufficient or inadequate for additional consideration.

Specific parameters present in the ABTP effluent having a pretreatment limitation under the Organic Chemicals, Plastics and Synthetic Fibers (OCPSF) categorical standard are identified in Table 6 by the reference to footnote 20 under the "parameters" column. Given ongoing pretreatment evaluations

TABLE 7

EVALUATION OF BIOACCUMULATIVE POTENTIAL

Parameter (1)	Log P (2)	BCF (3)	90th Percentile Effluent CONC. (Or MDL) (4)	Adjusted 90th Perc. (5)	Human Health Based Criterion	Criterion Reference (6)	Potential Pollutant of Concern?
Alachlor	6.32	(8)	20 ug/l	11.15 ng/l	700 ug/l	e	NO
Aldrin	5.3	1,557	MDL (0.5 ug/l)	0.28 ng/l	0.074 ng/l	a	YES
BHC (beta)	3.9	130	MDL (0.5 ug/l)	0.28 ng/l	13.4 ng/l	a	NO
BHC (gamma)	3.9	130	MDL (0.5 ug/l)	0.28 ng/l	16.6 ng/l	a	NO
bis(2-ethylhexyl)phthalate	4.88	130	26 ug/l	14.5 ng/l	15 mg/l	a	NO
Butylbenzylphthalate	4.91	414	MDL (10 ug/l)	5.6 ng/l	1.5-350 mg/l	a;(11)	NO
Cadmium	(10)	766	0.004 mg/l	2.2 ng/l	5 ug/l	g	NO
Chlordane	6.0	4,702	MDL (5.0 ug/l)	2.8 ng/l	0.46 ng/l	a	YES
Chloronitrobenzene	2.41	7.1-288	620 ug/l	346 ng/l	115 ug/l	b	NO
2-Chloroaniline	1.9	20-200	MDL (10 ug/l)	5.6 ng/l	100-200 ug/l	b	NO
2-Chlorophenol	2.19	214	24 ug/l	13.4 ng/l	200 ug/l	b	NO
Copper	(10)	328	0.051 ug/l	28 ug/l	1 mg/l	e	NO
Cyclohexadiene-Dione	10.2	(8)	MDL (10 ug/l)	5.6 ng/l	5 mg/l	f	NO
Decane	6.03 (9)	(8)	MDL (10 ug/l)	5.6 ng/l	1-7 mg/l	f;(12)	NO
Di-n-butylphthalate	5.6	748	MDL (10 ug/l)	5.6 ng/l	35 mg/l	a	NO
4'4'-DDD	6.2	(8)	MDL (1.0 ug/l)	0.56 ng/l	0.024 ng/l	a	YES
4'4'-DDT	6.19	53,600	MDL (1.0 ug/l)	0.56 ng/l	0.024 ng/l	a	YES
1,2-Dichlorobenzene	3.38	55.6	66 ug/l	36.8 ng/l	400 ug/l	a	NO
1,3-Dichlorobenzene	3.6	41.2	MDL (10 ug/l)	5.6 ng/l	400 ug/l	a	NO
1,4-Dichlorobenzene	3.6	37.5	50 ug/l	28 ng/l	75 ug/l	g	NO
Dodecanoic Acid	4.2	(8)	MDL (10 ug/l)	5.6 ng/l	(8)	-	(7)
Endrin	5.6	(8)	MDL (10 ug/l)	5.6 ng/l	1 ug/l	a	NO
Ethylmethylbenzene	3.66	(8)	MDL (10 ug/l)	5.6 ng/l	14 ug/l	a;(13)	NO
Heptachlor	4.4	11,200	MDL (0.5 ug/l)	0.28 ng/l	0.28 ng/l	a	YES
Manganese	(10)	366	0.481 mg/l	0.27 ug/l	50 ug/l	a	NO
Mercury	(10)	3,750	MDL (0.0005 mg/l)	0.28 ng/l	144 ng/l	a	NO
2-Methylheptane	(8)	(8)	MDL (10 ug/l)	5.6 ng/l	7 mg/l	f;(12)	NO
3-Methylheptane	(8)	(8)	MDL (10 ug/l)	5.6 ng/l	7 mg/l	f;(12)	NO
2-Methylnaphthalene	3.86	28-23,500	MDL (10 ug/l)	5.6 ng/l	.69 ug/l	b;(14)	NO
Naphthalene	3.45	10-1,000	MDL (10 ug/l)	5.6 ng/l	.69 ug/l	b	NO
Phenanthrene	4.46	(8)	MDL (10 ug/l)	5.6 ng/l	2.8 ng/l	a	YES
Propylbenzene	3.69	(8)	MDL (10 ug/l)	5.6 ng/l	.2 mg/l	d	NO
Silver	(10)	26-437	MDL (0.030 mg/l)	16.7 ng/l	50 ug/l	a	NO
Tetradecanoic Acid	(8)	(8)	MDL (10 ug/l)	5.6 ng/l	(8)	-	(7)
1,2,4-Trichlorobenzene	4.23	182	MDL (10 ug/l)	5.6 ng/l	.4 mg/l	a;(15)	NO
2,4,6-Trichlorophenol	3.69	35-250	MDL (10 ug/l)	5.6 ng/l	1.2 ug/l	a	NO
Trimethylbenzene	3.52	(8)	MDL (10 ug/l)	5.6 ng/l	0.4 mg/l	g;(16)	NO
Zinc	(10)	651	0.275 mg/l	153 ng/l	1-5 mg/l	e	NO

Notes:

(1) Only those parameters with log P > 3.5, BCF > 188, or identified as potentially bioaccumulative based on presence in sludge are included here.

(2) Log P is the logarithm of the octanol-water partition coefficient for the listed parameter.

(3) BCF is the bioconcentration factor identified for the listed parameter.

(4) The method detection limit (MDL) has been used for comparison purposes when the 90th percentile effluent concentration corresponds to an instance of nondetection.

(5) The 90th percentile or MDL has been multiplied by the effluent flow of 25.66 cfs and divided by a 7Q10 value of 45,970 cfs for the Mississippi River as recommended by the Technical Support Document. The Mississippi River 7Q10 value was furnished by the Illinois Geological Survey.

(6) The criteria identified are found in the following references:

a. EPA Quality Criteria for Water, 1986. Value for fish and water consumption. If a carcinogen, value at 10^{-6} risk level.

b. EPA Multimedia Envirionmental Goals for Environnmental Assessment, Vol. 2, 1977. PB-276-920 Value used is the Ambient Level Goal based on Health Effects.

c. CESARS (Chemical Evaluation Search and Retrieval System), 1988.

d. Verschueren. Water organoleptic effects limit.

e. Drinking Water and Health, National Academy of Sciences, 1977 - 1986, Vol. 1-6. Value used is the Suggested No-Adverse Response Level.

f. EPA OHMTADS and IRIS databases. Value is recommended drinking water limit.

g. EPA Health Advisories, 1987. Value used is the Lifetime Health Advisory for Drinking Water.

(7) Not determined due to lack of applicable criteria

(8) No value identified

(9) Calculated based on solubility: log P = 4.5 - 0.75 log S where S = Solubility in mg/l.

(10) Not applicable

(11) for phthalate esters

(12) for Hexane (1 mg/l) and Heptane (7 mg/l)

(13) for ethyl C6H6 and methyl C6H6

(14) for naphthalene

(15) for dichlorobenzenes

(16) for dimethyl C6H6 (xylene)

and facility design by the OCPSF industries within the ABTP Region, significant influent concentration reductions of OCPSF parameters will occur after November 5, 1990, the current compliance date for the OCPSF categorical standard. In particular the following OCPSF parameters will have significant concentration reductions in order to comply with this categorical standard:

Benzene
Chlorobenzene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Ethylbenzene
2-Nitrophenol
4-Nitrophenol
Toluene

In addition, a number of other non-OCPSF parameters will also experience significant influent concentration reductions as a result of the proposed OCPSF pretreatment facilities based on data supplied by the OCPSF categorical industries describing planned process modifications or elimination. Those parameters include the following compounds:

2-Nitroaniline
4-Nitroaniline
2-Nitrochlorobenzene
4-Nitrochlorobenzene
Aniline

As can be noted, many of the parameters identified in Table 6 which are shown as being detected in the effluent are also parameters for which significant influent concentration reductions are anticipated after the OCPSF compliance date.

Table 8 outlines all of the OCPSF parameters and their associated

TABLE 8

PARAMETERS AND LIMITATIONS RELATING TO
THE ORGANIC CHEMICALS, PLASTICS, AND SYNTHETIC FIBERS (OCPSF)
NATIONAL CATEGORICAL PRETREATMENT STANDARD (40 CFR 414) (1)

Parameter	Limitations (mg/l) 1-Day Max.	Max. Month Avg.	Parameter	Limitations (mg/l) 1-Day Max.	Max. Month Avg.
Organic Pollutants:					
Acenaphthene	0.047	0.019	Hexachlorobutadiene	0.380	0.142
Benzene	0.134	0.057	Naphthalene	0.047	0.019
Carbon Tetrachloride	0.380	0.142	Nitrobenzene	6.402	2.237
Chlorobenzene	0.380	0.142	2-Nitrophenol	0.231	0.065
1,2,4-Trichlorobenzene	0.794	0.196	4-Nitrophenol	0.576	0.162
Hexachlorobenzene	0.794	0.196	4,6-Dinitro-o-cresol	0.277	0.078
1,2-Dichloroethane	0.574	0.180	Phenol	0.047	0.019
1,1,1-Trichloroethane	0.059	0.022	Bis(2-ethylhexyl) phthalate	0.258	0.095
Hexachlorethane	0.794	0.196			
1,1-Dichloroethane	0.059	0.022	Di-n-butyl phthalate	0.043	0.020
1,1,2-Trichloroethane	0.127	0.032	Diethyl phthalate	0.113	0.046
Chloroethane	0.295	0.110	Dimethyl phthalate	0.047	0.019
Chloroform	0.325	0.111	Anthracene	0.047	0.019
1,2-Dichlorobenzene	0.794	0.196	Fluorene	0.047	0.019
1,3-Dichlorobenzene	0.380	0.142	Phenanthrene	0.047	0.019
1,4-Dichlorobenzene	0.380	0.142	Pyrene	0.048	0.020
1,1-Dichloroethylene	0.060	0.022	Tetrachloroethylene	0.164	0.052
1,2-Trans-Dichloroethylene	0.066	0.025	Toluene	0.074	0.028
1,2-Dichloropropane	0.794	0.196	Trichloroethylene	0.069	0.026
1,3-Dichloropropylene	0.794	0.196	Vinyl Chloride	0.172	0.097
2,4-Dimethylphenol	0.047	0.019			
Ethylbenzene	0.380	0.142	Other Pollutants:		
Fluoranthene	0.054	0.022	Total Cyanide	1.200	0.420
Methylene Chloride	0.170	0.036	Total Lead	0.690	0.320
Methyl Chloride	0.295	0.110	Total Zinc	2.610	1.050

(1) Limits as shown are the associated pretreatment effluent concentration requirements prior to any allowances for alternate limits utilizing the combined wastestream formula.

pretreatment effluent concentration requirements prior to any allowances for alternate limits utilizing the combined wastestream formula.

3. <u>Parameters Inhibitory to Plant Operations</u>: Some parameters have been identified which may inhibit the effectiveness of biological or chemical treatment. Those which are known to inhibit activated sludge processes and which were present in the secondary process influent are presented in Table 9, along with their average concentration and known inhibitory levels. It should be noted that the inhibitory levels shown are based on available literature and not on observed operational difficulties. For this reason, if the average concentration exceeds the suspected level of inhibition, and no treatment problems developed, it is reasonably assumed that the process, as operated at the ABTP, is tolerant to at least the level observed. In order to determine this, parameters which exceeded the referenced inhibitory level to activated sludge were further evaluated to determine whether any operational problems had occurred.

4. <u>Sludge Disposal</u> -- Currently, the sludges from the P-Chem plant and American Bottoms primary and secondary processes are disposed of at a sanitary landfill. Prior to disposal, they are tested to assure that they do not have characteristics that would cause them to be classified as RCRA wastes. If they are identified as RCRA wastes, they must be transported to and disposed at a licensed RCRA disposal facility. It is desirable that parameters which may lend hazardous properties to the sludges be kept at non-hazardous levels.

a. EP Toxic Parameters -- Certain parameters have been shown to exhibit toxic properties when they leach from landfilled solid wastes and enter groundwater. The Extraction Procedure (EP) toxicity testing method has been developed to evaluate the potential leachability of these compounds from a solid waste. A listing of these parameters, their limits, and the average detected concentrations of the parameters in the AB and P-Chem sludges and leachates are provided in Tables 10 and 11, respectively. Attempts were made to relate EP Toxicity

TABLE 9

INFLUENT PARAMETERS INHIBITORY TO TREATMENT PROCESSES

The following parameters were present in the influent to the American Bottoms Secondary process and have been reported to inhibit the indicated processes at the given concentrations according to published data.

Parameter	Average ABTP Primary Effluent Conc.(1) (mg/l)	Average P-Chem Effluent Conc. (mg/l)	Average Secondary Influent Concentration (2) (mg/l)	Maximum Secondary Influent Concentration (2) (mg/l)	Level Inhibitory to Activated Sludge (mg/l)
1,2-Dichlorobenzene	0.001	0.320	0.130	0.320	5
1,3-Dichlorobenzene	0.000	0.006	0.002	0.008	5
1,4-Dichlorobenzene	0.001	0.287	0.120	0.245	5
2,4-Dichlorophenol	0.000	0.007	0.003	0.014	12.7-105
2-Chlorophenol	0.000	0.036	0.015	0.041	5, 20-200
2-Nitrophenol	0.000	2.800	1.200	3.387	400
4-Nitrophenol	0.004	7.200	3.000	7.862	59
Aniline	0.016	14.000	5.800	5.791	>100.00
Arsenic	0.035	0.015	0.027	0.191	0.1, 0.7
Benzene	0.002	10.000	4.100	7.026	100-500
Cadmium	0.011	0.044	0.025	0.590	1-10
Chloroform	0.011	0.005	0.009	0.040	1010
Chromium, total	0.130	0.037	0.092	0.915	1-100, 2
Chromium, trivalent	0.130	0.037	0.092	0.478	10-50
Copper	0.046	0.490	0.230	1.700	1
Cyanides, total	0.000	0.001	0.000	0.005	0.1-5, 1
Ethylbenzene	0.028	0.870	0.380	0.879	200
Iron	3.900	0.600	2.500	30.312	1000, 35
Lead	0.016	0.030	0.002	0.481	0.1-5.0, 10-100
Manganese	0.470	0.190	0.350	0.835	10, 1.0
Mercury	0.000	0.000	0.000	0.001	0.1-5, 0.002
Naphthalene	0.002	0.016	0.008	0.029	500
Nickel	0.023	0.640	0.280	1.311	1.0-2.5
Nitrobenzene	0.000	0.093	0.038	0.099	30-500
Phenolics	0.144	1.400	0.660	1.606	200
Toluene	0.040	0.150	0.085	0.371	200
Trichloroethene	0.000	0.083	0.034	0.413	>1000
Zinc	0.220	1.100	0.580	28.477	0.08-10, 1-5

(1) The ABTP Primary effluent and P-Chem effluent combine with return activated sludge and sludge building drainage to make up the secondary influent.

(2) Secondary influent concentration has been calculated based on flow weighting the maximum P-Chem effluent concentration (41.3%) and the maximum primary effluent (58.7%) concentration.

TABLE 10

OCCURRENCE OF EP TOXICITY LIMITED PARAMETERS
IN
AMERICAN BOTTOMS SLUDGE

Extraction Procedure (EP) Toxic Parameter	Number of Months (of 12) Detected in Sludge (dry basis)	Average(1) Detected Dry Concentration (mg/kg)	Number of Months (of 12) Detected in Leachate	Average(1) Detected Leachate(2) Concentration (mg/l)	Leachate Limit for Disposal (mg/l)
Arsenic	12	51.18	1	0.003	5.0
Barium	12	2642.63	0	0	100.0
Cadmium	12	119.62	2	0.009	1.0
Chromium	12	606.00	2	0.008	5.0
Lead	12	254.27	2	0.258	5.0
Mercury	10	0.873	0	0	0.2
Selenium	3	1.029	0	0	1.0
Silver	1	0.795	2	0.005	5.0
Endrin (3)	0	0	0	0	0.02
Lindane (3)	0	0	0 (6)	0 (3)	0.4
Methoxychlor	0	0	0	0	10.0
Toxaphene	0	0	0	0	0.5
2,4-D (4)	0	0	0	0	10.0
2,4,5-TP (5)	0	0	0	0	1.0

(1) Average based on all months sampled.

(2) As determined by EP Toxicity text procedure.

(3) Endrin and Lindane data previously eliminated under rationale 2B as addressed in Section 2, Sub-Section A-3.

(4) 2,4-D represents 2,4-Dichlorophenoxyacetic Acid.

(5) 2,4,5-TP represents 2,4,5-Trichlorophenoxy Propionic Acid.

(6) Detected in leachate on one occurrence but was not detected in any other sample thus eliminated under rationale 2B as addressed in Section 2, Sub-Section A-3.

TABLE 11

OCCURRENCE OF EP TOXICITY LIMITED PARAMETERS
IN
P-CHEM SLUDGE

Extraction Procedure (EP) Toxic Parameter	Number of Months (of 11) Detected in Sludge (dry basis)	Average(1) Detected Dry Concentration (mg/kg)	Number of Months (of 11) Detected in Leachate	Average(1) Detected Leachate(2) Concentration (mg/l)	Leachate Limit for Disposal (mg/l)
Arsenic	11	150	0	0	5.0
Barium	11	210	2	0.891	100.0
Cadmium	11	300	10	2.091 (3)	1.0
Chromium	11	830	3	0.093	5.0
Lead	11	2300	9	0.793	5.0
Mercury	11	3.8	2	0.005	0.2
Selenium	8	23	0	0	1.0
Silver	10	26	2	0.025	5.0
Endrin (6)	0	0	0	0	0.02
Lindane (6)	0	0	0 (7)	0	0.4
Methoxychlor	0	0	0	0	10.0
Toxaphene	0	0	0	0	0.5
2,4-D (4)	0	0	0	0	10.0
2,4,5-TP (5)	0	0	0	0	1.0

(1) Average based only on 11 months' analyses. No sample was collected in January 1989.

(2) As determined by EP toxicity test procedure.

(3) Upon discovery of the excursions of EP toxicity limits which occurred, the P-Chem sludge was disposed of at licensed RCRA facilities. Efforts undertaken pursuant to the Pretreatment Program and other Village regulations achieved a reduction of cadmium to acceptable levels to meet EP toxicity standards.

(4) 2,4-D represents 2,4-Dichlorophenoxyacetic acid.

(5) 2,4,5-TP represents 2,4,5-Trichlorophenoxy Propionic acid.

(6) Endrin and lindane data previously eliminated under rationale 2B as addressed in Section 2, Sub-Section A-3.

(7) Detected in leachate on one occurrence but was not detected in any other sample thus eliminated under rationale 2B as addressed in Section 2, Sub-Section A-3.

concentrations to influent or sludge concentrations, but no correlation was apparent.

Upon discovery of the excursions of EP toxicity limits, the P-Chem sludge was disposed of at licensed RCRA facilities. Source and operational controls have since been implemented. Subsequent results of EP toxicity testing have shown acceptable levels to meet EP toxicity standards. These results are also included in Tables 10 and 11.

b. Other Sludge Parameters -- Investigation was made of proposed regulations that would result in additional land disposal limitations being placed on the wastewater treatment sludges from the ABTP and P-Chem plant. The regulations considered included the proposed "EPA Regulations on Land Disposal Restrictions" (References at No. 46), and the "EPA Proposed Technical Standards for Sewage Sludge" (References at No. 47).

The proposed "EPA Regulations on Land Disposal Restrictions" identify wastes that can not be disposed of in landfills, surface impoundments, waste piles, injection wells, land treatment facilities, salt dome or bed formations, underground mines or caves, or concrete vaults or bunkers. This proposal outlines the use of the toxicity characteristic leaching procedure (TCLP) for the identification and limitation of certain toxic constituents of a waste.

Limited TCLP test data for the P-Chem and American Bottoms treatment sludges were available at the time of preparation of this report. It is unknown at this time what affect, if any, this legislation will have on the methods of disposal currently in use, or on the development of local limits.

The proposed "EPA Technical Standards for Sewage Sludge" established minimum requirements for sewage sludge that is applied to agricultural and non-agricultural land, distributed and marketed, disposed of in monofills, disposed of on surface disposal sites, or incinerated.

Limits are proposed for various metal and pesticide constituents that may be present in sludge. These standards are not applicable to the ABTP and P-Chem sludges, however, as they are disposed in a sanitary landfill, which is not included in this particular legislation.

5. Plant Safety -- Care must be taken to assure that substances present in the wastewater do not present hazards to the plant personnel or equipment. The potential hazards include discharge of flammable or explosive pollutants or pollutants which generate toxic fumes in the sewer system.

Industrial hygiene assessments were performed at both the P-Chem and ABTP facilities during 1988 and 1989, by consultants that specialize in that type of work. Samples of air were taken at various locations where vapors emitted from wastewater might be confined in spaces accessible to personnel. The samples were tested to determine qualitatively which organic compounds were present and quantitative tests were then made of those compounds that were present in significant quantities. No compounds were found in concentrations exceeding limits established by the Occupational Safety and Health Administration (OSHA) or recommended by the American Conference of Governmental Industrial Hygienists (ACGIH).

B. Determination of Removal Efficiencies - Wet Process

Removal efficiencies were determined for the wet treatment processes according to the block diagram presented in Figure 4. As used here, wet process refers to process influent and effluent streams which were used in the calculation of removals. Sidestreams were not considered in this calculation. The flow data utilized for calculation of mass loading varied according to the source of the concentration data used. Influent parameters

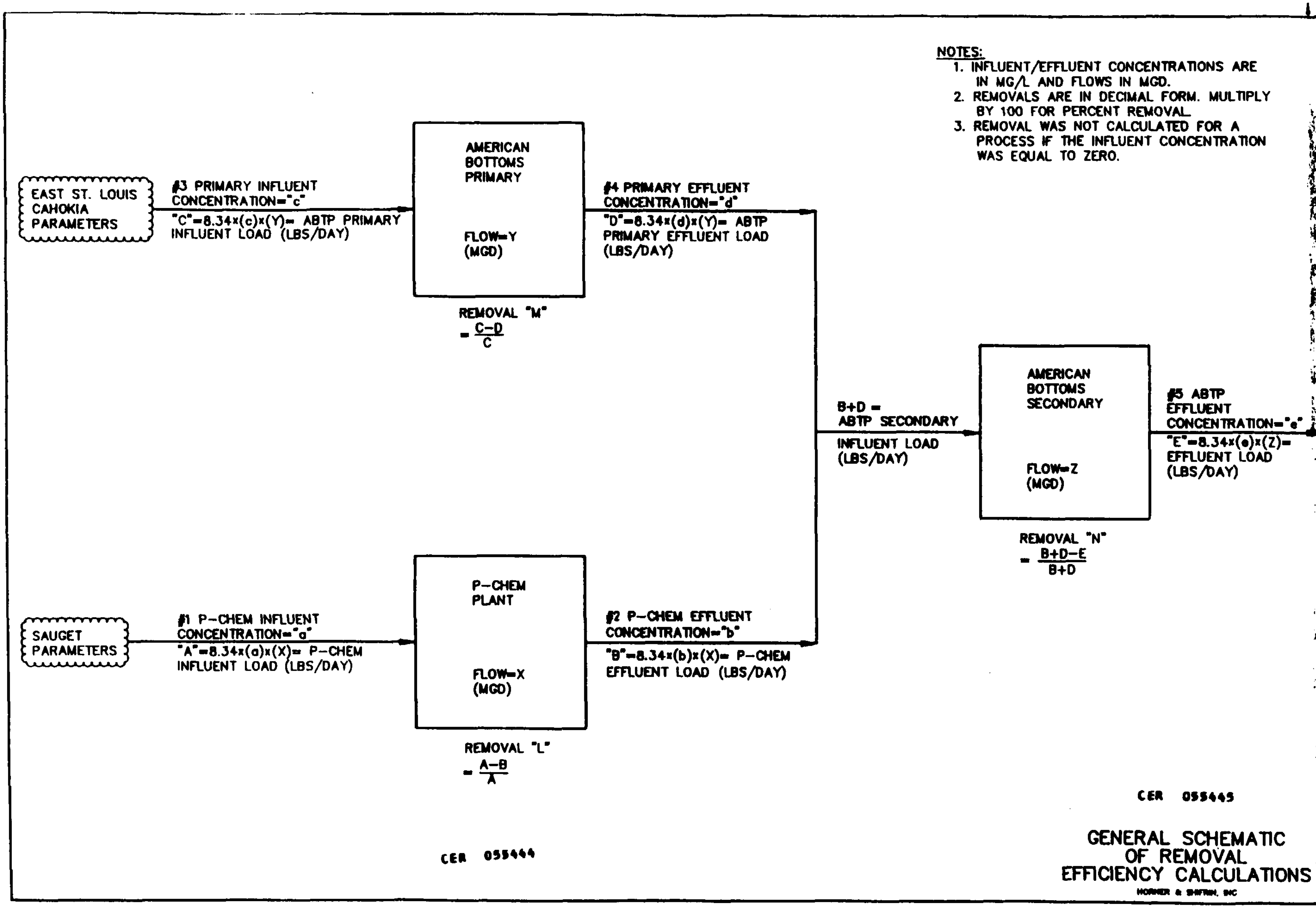

NOTES:
1. INFLUENT/EFFLUENT CONCENTRATIONS ARE IN MG/L AND FLOWS IN MGD.
2. REMOVALS ARE IN DECIMAL FORM. MULTIPLY BY 100 FOR PERCENT REMOVAL.
3. REMOVAL WAS NOT CALCULATED FOR A PROCESS IF THE INFLUENT CONCENTRATION WAS EQUAL TO ZERO.
EAST ST. LOUIS CAHOKIA PARAMETERS
#3 PRIMARY INFLUENT CONCENTRATION="c"
"C"=8.34x(c)x(Y)= ABTP PRIMARY INFLUENT LOAD (LBS/DAY)
AMERICAN BOTTOMS PRIMARY
FLOW=Y (MGD)
REMOVAL "M" = C-D / C
#4 PRIMARY EFFLUENT CONCENTRATION="d"
"D"=8.34x(d)x(Y)= ABTP PRIMARY EFFLUENT LOAD (LBS/DAY)
B+D = ABTP SECONDARY INFLUENT LOAD (LBS/DAY)
AMERICAN BOTTOMS SECONDARY
FLOW=Z (MGD)
REMOVAL "N" = B+D-E / B+D
#5 ABTP EFFLUENT CONCENTRATION="e"
"E"=8.34x(e)x(Z)= EFFLUENT LOAD (LBS/DAY)
SAUGET PARAMETERS
#1 P-CHEM INFLUENT CONCENTRATION="a"
"A"=8.34x(a)x(X)= P-CHEM INFLUENT LOAD (LBS/DAY)
P-CHEM PLANT
FLOW=X (MGD)
REMOVAL "L" = A-B / A
#2 P-CHEM EFFLUENT CONCENTRATION="b"
"B"=8.34x(b)x(X)= P-CHEM EFFLUENT LOAD (LBS/DAY)
CER 055445
CER 055444
GENERAL SCHEMATIC OF REMOVAL EFFICIENCY CALCULATIONS
HORNER & SHIFRIN, INC

FIGURE 4

have been grouped according to the classifications: wet chemistry, metals, pesticides, volatile organics and semivolatile organics. All of the removals calculated for the Gulf Coast Data are provided in Appendix D.

1. <u>Wet Chemistry Parameters</u> -- The conventional (wet chemistry) pollutants detected in the influents to the treatment processes and their median removal efficiencies are compiled in Table 12. This table includes removals calculated from both Gulf Coast data and American Bottoms data. Where the American Bottoms data is available, it has been utilized in lieu of the Gulf Coast data due to greater available quantity of data.

a. Gulf Coast Data -- The sampling results received each month from Gulf Coast Laboratories were compiled into a database containing the concentrations of all parameters detected at each of the eleven sampling points. From this data, the results for location numbers 1 and 2 (P-Chem influent and effluent), 3 and 4 (AB primary process influent and effluent), and 5 (AB plant effluent) were segregated and the non-zero parameters were identified. This concentration data was combined with flow data, calculated by averaging the daily process flows which occurred on each of the three days included in the sampling event, to obtain mass loadings at each of the subject locations. Removal efficiencies were then calculated on a mass basis across each of the three treatment processes for each parameter.

After all the sampling data had been received and processed, the removals calculated monthly were ranked in ascending order for each process and parameter to facilitate the calculation of decile removals in accordance with Section 3 of USEPA <u>Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program</u>. Removal efficiencies were not calculated for those events in which the influent concentration was zero and, therefore, were not included in the calculation of deciles.

TABLE 12

WET PROCESS REMOVALS OF CONVENTIONAL POLLUTANTS

Parameter	Data Source (1)	Median Removal Across P-Chem	Median Removal Across AB Primary	Median Removal Across AB Secondary
BOD	AB	13.65	31.17	93.83
Chlorides	AB	0.00 (2)(3)	2.08 (3)	5.10 (3)
COD	GC	42.40	30.46	65.89
Cyanides	GC	100.00	(4)	0.00 (2)
Fluoride	GC	3.12 (3)	0.00 (3)	0.00 (2)(3)
Oil & Grease	GC	73.37	37.50	72.65
Phenolics	GC	0.00 (2)	0.61	81.13
Sulfates	GC	8.12 (3)	9.09 (3)	2.04 (3)
TOC	AB	9.78	18.96	69.00
TDS	GC	0.00 (2)(3)	0.00 (3)	7.98 (3)
TSS	AB	35.00	62.83	75.59

(1) Where data was available for both Gulf Coast (GC) and American Bottoms (AB) sampling, preference was given to the AB data due to its greater quantity and consistency.

(2) Actual calculated median removal was slightly less than zero. Zero removal has been assumed for determination of local influent limits.

(3) These parameters are conservative pollutants and therefore no removal is expected in the treatment processes. However, median removals for these parameters have been calculated for use in the determination of allowable headworks loadings based chronic criteria.

(4) Not present in influent.

Decile removals were then calculated and the median (5th decile) was selected as representative of the removal achieved for that parameter across the given process. The median is recognized as the level above which removal occurred fifty percent of the time. An example of the methodology employed is provided in Appendix D.

b. American Bottoms Data -- American Bottoms daily sampling and flow data for the period May 1, 1988 through April 30, 1989 was also used for the calculation of removal efficiencies. This period was chosen so as to correspond to the period of sampling conducted by Gulf Coast Laboratories, Inc. Removals were calculated on a daily basis for each parameter and process, then ranked for the determination of decile removal efficiencies. As with the Gulf Coast data, the median was selected as representative of the removal efficiency to be expected across the given processes. As previously stated, the American Bottoms data set was recognized as the more comprehensive and therefore, when available in conjunction with Gulf Coast data, was utilized in lieu of the Gulf Coast data.

2. Metals:

a. Gulf Coast Data -- This data was compiled in the same manner as the Gulf Coast Wet Chemistry data. As with the conventional pollutants, monthly removal efficiencies were calculated and ranked for decile determination. The parameters identified and their median removals, determined in the same manner as those for the Wet Chemistry parameters, are included in Table 13.

b. American Bottoms Data -- As with the wet chemistry data, daily sampling and flow data was used for the calculation of daily

TABLE 13

WET PROCESS REMOVALS OF METALS

Parameter	Data Source (1)	Median Removal Across P-Chem (%)	Median Removal Across AB Primary (%)	Median Removal Across AB Secondary (%)
Arsenic	GC	79.25	28.57	0.00 (3)
Barium	GC	49.73	58.24	45.29
Boron	GC	7.51	2.00	6.03
Cadmium	AB	100.00	(2)	(4)
Cadmium	GC	92.81	16.67	100.00
Chromium, Total	GC	100.00	43.40	100.00
Chromium, Total	AB	85.00	(2)	(4)
Chromium, Trivalent	GC	100.00	44.50	100.00
Copper	AB	64.25	(2)	(4)
Copper	GC	96.84	29.17	67.58
Iron	AB	96.75	65.56	88.57
Iron	GC	98.26	75.90	80.14
Lead	AB	90.69	(2)	(4)
Lead	GC	99.59	57.50	84.12
Manganese	GC	62.82	28.81	6.48
Mercury	GC	100.00	100.00	100.00
Nickel	AB	72.48	(2)	(4)
Nickel	GC	73.22	9.09	23.52
Silver	GC	100.00	(5)	(5)
Zinc	AB	92.36	(2)	(4)
Zinc	GC	96.08	47.10	55.25

(1) Where data was available for both Gulf Coast (GC) and American Bottoms (AB) sampling, preference was given to the AB data due to its greater quantity and consistency.

(2) Concentration data was not available from the indicated source for this location.

(3) Actual calculated median removal was less than zero. Zero removal has been assumed for the determination of local influent limits.

(4) Removal was not calculated for this location due to the absence of AB secondary influent concentration data from the indicated source.

(5) Not present in influent.

removal efficiencies except as noted. Due to the unavailability of AB primary process data for cadmium, chromium, copper, lead, nickel, and zinc, Gulf Coast data was used for those parameters in determining removal efficiencies across the primary process.

Once again, the removal data was ranked, deciles were calculated, and the median was selected to represent expected removal efficiencies. As with the wet chemistry parameters, where available, American Bottoms data was chosen preferentially over Gulf Coast data due to the quantity of data points and the aforementioned conservative nature of the analysis. This data is also included in Table 13.

3. Pesticides - Gulf Coast Data -- During the twelve months of sampling, pesticides were detected in the influents only on isolated occasions, and in each case were totally removed by the treatment processes. No pesticides were identified in the AB plant effluent during any of the sampling events.

4. Volatile Organics - Gulf Coast Data -- Removal efficiencies for volatile organic parameters were calculated on a monthly basis using the Gulf Coast data and the average flow over the three-day sampling event for the calculation of mass loadings. As with the conventional pollutants and metals, deciles were calculated and the 5th decile (median) was selected as a representative removal efficiency. The median for each parameter and process is reported in Table 14.

5. Semivolatile Organics - Gulf Coast Data -- Removal efficiencies for semivolatile organic parameters were calculated in the same manner as for the organics. These results are presented in Table 15.

6. Evaluation of Removals Relative to Published/Anticipated Values -- Comparisons were made of the removals achieved in the American Bottoms plant to those available for other plants. The resources used included the WERL

TABLE 14

WET PROCESS REMOVALS OF VOLATILE ORGANIC POLLUTANTS

Parameter	Data Used(1)	Median Removal Across P-Chem (%)	Median Removal Across AB Primary (%)	Median Removal Across AB Secondary (%)
Acetone	GC	0.00 (2)	0.00 (2)	99.60
Benzene	GC	14.17	49.09	99.38
2-Butanone	GC	88.46	100.00	98.90
Chlorobenzene	GC	0.00 (2)	0.00 (2)	96.22
Chloroform	GC	100.00	0.00	0.00 (2)
Dichlorobenzene	GC	18.83 (3)	0.00 (2)(3)	87.74 (3)
Ethylbenzene	GC	0.00 (2)	0.00 (2)	98.71
4-Methyl-2-Pentanone	GC	0.00 (2)	26.67	100.00
Methylene Chloride	GC	39.68	8.33	94.06
Toluene	GC	44.23	0.00	100.00
1,1,1-Trichloroethane	GC	97.38	28.57	100.00
Trichloroethene	GC	0.00 (2)	(4)	98.20
Xylene	GC	0.00 (2)	0.00 (2)	95.66

(1) GC indicates Gulf Coast data has been used.

(2) Actual calculated median removal was less then zero. Zero removal has been assumed for the determination of local influent limits.

(3) Dichlorobenzene was tentatively identified in the library search but the isomer was unspecified. Refer to the removals calculated for the isomer of interest.

(4) Not present in influent.

TABLE 15

WET PROCESS REMOVAL OF SEMIVOLATILE ORGANIC POLLUTANTS

Parameter	Data Source (1)	Median Removal Across P-Chem (%)	Median Removal Across AB Primary (%)	Median Removal Across AB Secondary (%)
Alachlor	GC	(3)	11.67	10.12
Aniline	GC	0.00 (2)	(3)	100.00
Atrazine	GC	(3)	0.00	15.89
Bis-2-ethylhexylphthalate	GC	33.33	21.88	63.33
Butoxyethoxyethanol	GC	(3)	100.00	(3)
Butylbenzylphthalate	GC	100.00	40.00	100.00
4-Chloroaniline	GC	0.00 (2)	(3)	100.00
Chloroaniline	GC	0.00 (2)	(3)	0.00 (2)
Chloronitrobenzene	GC	5.02	(3)	86.18
2-Chlorophenol	GC	17.39	(3)	78.00
1,2-Dichlorobenzene	GC	50.36	20.00	76.29
1,3-Dichlorobenzene	GC	100.00	(3)	100.00
1,4-Dichlorobenzene	GC	45.46	50.00	86.20
2,4-Dichlorophenol	GC	22.73	(3)	100.00
Di-n-butylphthalate	GC	(3)	12.50	100.00
Ethoxybenzenamine	GC	100.00	(3)	(3)
Naphthalene	GC	54.59	5.26	100.00
2-Nitroaniline	GC	0.00 (2)	66.67	48.10
4-Nitroaniline	GC	0.00	100.00	91.39
Nitrobenzene	GC	1.59	(3)	86.07
2-Nitrophenol	GC	12.85	(3)	98.58
4-Nitrophenol	GC	10.12	100.00	94.26
Phenol	GC	0.00	22.22	100.00

(1) GC indicates Gulf Coast Data has been used.

(2) Actual calculated median removal was less than zero. Zero removal has been assumed for the determination of local influent limits.

(3) Not present in influent.

Treatability database and USEPA Fate of Priority Pollutants in Publicly Owned Treatment Works.

EA compared activated sludge average removal data for a limited number of parameters to data in the WERL database. This comparison is included as part of Appendix E.

The median removals, as shown in Tables 14 and 15, closely matched the reported values for volatile and semivolatile organics.

The median removals for metals through the AB secondary process, with the exception of lead and cadmium, were generally lower than anticipated. Metal removals through the AB primary process, however, were typically higher. The overall removals for the combined processes were within the range of the published values.

The only parameters with median activated sludge removals considerably lower than published values were chloroform, 1,2-dichlorobenzene, total suspended solids, chromium, copper, nickel, zinc, iron, arsenic, barium, boron, and manganese. Iron and manganese removals were also low for the primary process. It should be noted, however, that removals are typically lower for compounds at lower influent concentrations to a process, and these lower than published removals may be a result of this phenomenon. Data was available for twelve metal parameters, ten volatile organics, and twelve semivolatile organics from the sources previously mentioned.

C. Other Evaluations - Flow Balance and Comparisons

During each Gulf Coast sampling event from November 1988 through April 1989, flow data was recorded for each sampling location during the actual staggered time period. The average flows recorded during the staggered sampling periods for the P-Chem effluent, AB Primary, and AB Secondary were compared with the average flow recorded over the three (3) day sampling period. Based on this comparison, it was concluded that the resultant averages of the referenced set of flow data represented reasonable comparisons, and that the average flow over the three (3) day sampling period for each month sampled would be more appropriate to use for evaluating specific time period average removals and also yearly average mass removals.

The flow patterns and characteristics as recorded in daily monitoring at the P-Chem and American Bottoms plant demonstrate good correction and flow balancing between various processes which further emphasize the use of average recorded flows when developing average overall trends.

IV. EVALUATION AND DETERMINATION OF NEED FOR LOCAL LIMITS

A. Decision Format

The determination as to whether a potential pollutant of concern was a pollutant of concern was made by following the U.S. EPA policy memoranda contained in the U.S. EPA Guidance Manual (References at No. 44). The August 5, 1985 policy memorandum states that "Based on the information obtained from the industrial waste survey and other sources, including influent, effluent, and sludge sampling, the POTW must determine which of these pollutants (if any) have a reasonable potential for pass-through, interference, or sludge contamination. For each of these pollutants of concern,... (emphasis added)."

Therefore, pollutants of concern were identified based on their potential impact to the sludge, treatment processes, or effluent. A parameter's potential impact to the sludge, treatment processes or effluent was evaluated based on four (4) main categories of consideration: pass-through, interference, sludge, and POTW worker safety. The various critical values associated with parameters in these categories have been discussed in Section III.

Parameters identified as pollutants of concern based on the above evaluation were then further evaluated to determine the maximum loading which can be accepted by the treatment facility without occurrence of pass-through, interference or sludge contamination. This process is known as determining the maximum allowable headworks concentration. The maximum allowable headworks concentrations are then evaluated against existing data to determine the need for a local limit for a specific parameter.

Previously, ammonia had been identified as requiring the development of local limits. These limits have been developed and are presented, in detail, in the Report on Local Limit Allocation for Ammonia prepared February 1989. No additional discussion of ammonia is provided in this report.

Based on the above-described criteria, a "decision format" was developed to identify pollutants of concern and to evaluate and determine the need for local limits for the pollutants of concern. The decision format developed and utilized herein is presented on Figure 5.

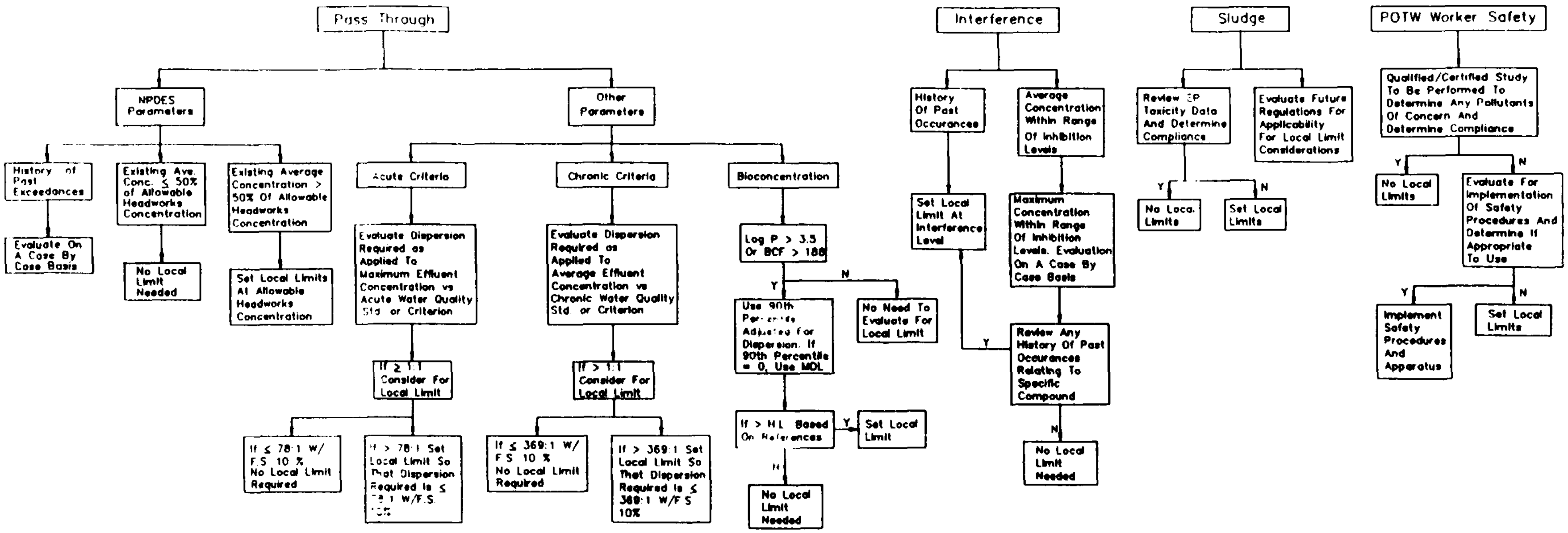
In regard to the Pass-Through category, the decision format required evaluation of each NPDES parameter based on the history of past exceedances, the plant's current capability to accept the parameter and existing average influent concentrations to identify pollutants of concern requiring local limit development. For non-NPDES parameters, pollutants of concern were identified by considering acute criteria and/or standards, chronic criteria and/or standards, and bioconcentration considerations.

In regard to the Interference category, a separate decision format was developed under which parameters related to the history of past occurrences and/or having average concentration values within the range of reported inhibition levels were evaluated and identified as pollutants of concern.

In regard to the Sludge category, the decision format required review of EP toxicity data and the evaluation of future regulatory action related to potential changes in the applicable testing method to identify pollutants of concern.

In regard to the POTW Worker Safety category, the decision format required the performance and review of formal industrial hygiene assessments, which are conducted by qualified independent consultants to determine whether additional safety procedures are required, to identify pollutants of concern.

The specific decision format procedures identified in the diagram on Figure 5 were utilized in the following sub-sections of this section to evaluate and determine the need for local limits for those parameters determined to be pollutants of concern.



Legend

W/	With
F.S.	Factor of Safety
LogP	Log of Octanol-Water Partition Coefficient
BCF	Bioconcentration Factor
MDL	Method Detection Limit
7Q10	Seven Day-Ten Year Low Flow
H.L.	Health-Based Limit
Std	Standard

CER 055458

CER 055457

DECISION FORMAT DETERMINATION OF NEED FOR LOCAL LIMITS

HORNER & SHIFRIN, INC

FIGURE 5

coliform; pH; chlorine residual; copper; lead; iron; mercury; nickel; oils, fats and greases; cadmium and chromium. The remaining three (3) NPDES parameters where recorded excursions occurred during this period are BOD_5, zinc, and phenols.

Based on the rationale outlined above, the following NPDES parameters were determined not to be a Pollutant of Concern because of the absence of excursions and their exclusion from the USEPA guidance designation of pollutants of concern:

Suspended Solids	Chlorine residual
Fecal Coliform	Iron
pH	Oils, fats, and greases

NPDES parameters that were determined to be pollutants of concern based on the review of past excursions to their NPDES limit are:

BOD_5
Zinc
Phenols

Other NPDES parameters that did not have excursions to the ABTP effluent limit but were designated in the program guidance as a Pollutant of Concern are:

Cadmium	Lead
Chromium	Nickel
Copper	Mercury

The above nine NPDES parameters determined to be pollutants of concern, as outlined above, are further evaluated in Sub-Section E - Section IV to determine the potential need for local limits.

b. Other Parameters: The "other" parameters evaluated under the pass through category, to determine which are a pollutant of concern, include parameters related to acute, chronic, and bioconcentration concerns.

A rationale was established to determine if any of the parameters in this category are pollutants of concern. Based on the acute and chronic evaluations outlined in Section III of this report and the receiving stream mixing zone considerations outlined in Sub-Section B of this Section IV, the rationale established was as follows: 1) a parameter, having a known acute standard and/or criteria, was considered to be a pollutant of concern if its required dispersion factor exceeded 78:1 with a safety factor of one hundred (100) percent e.g., a dispersion factor of 39:1; 2) a parameter, having a known chronic standard and/or criteria, was considered to be a pollutant of concern if its required dispersion factor exceeded 369:1 with a safety factor of one hundred (100) percent e.g., a dispersion factor of 184:1; 3) a parameter which was one of the three (3) required parameters in USEPA program guidance (arsenic, cyanide, and silver) (References at No. 44) as a pollutant of concern; and 4) a parameter which was identified, as outlined in Section III, as having a bioconcentration concern was considered a pollutant of concern.

In reference to items 1) and 2) of the above paragraph, the parameters previously identified in Table 6 of this report whose required dispersions to meet acute criteria exceed a 1:1 dispersion based on their maximum recorded effluent concentration and/or whose required dispersion to meet chronic criteria and/or standards exceed 1:1 dispersion based on their average recorded effluent concentration were considered potential pollutants of concern and were evaluated under the decision format described above to determine whether adequate dispersion will be provided to attain acute and chronic standards and/or criteria. Those potential pollutants of concern for which adequate dispersion will not be provided were identified as pollutants of concern. The potential pollutants of concern considered, their required dispersion factors, and their respective designation as a pollutant of concern or not are as follows:

Parameter	Acute	Pollutant of Concern	Chronic	Pollutant of Concern
	Required Dispersion to Meet Most Restrictive Acute and Chronic Standard or Criterion			
Aniline (2)	170.0:1	Yes	240.0:1	No
Atrazine	2.8:1	No	2.5:1	No
Bis(2-Ethylhexyl)phthalate (3)	< 1:1	No	4.0:1	No
Cadmium	11.6:1	No	2.5:1	No
Chlorides	1.9:1	No	4.8:1	No
4-Chloroaniline (4)	6.7:1	No	6.3:1	No
Chlorobenzene (1)	3.0:1	No	4.6:1	No
Chloronitrobenzene (2)	6.8:1	No	39.2:1	No
Copper	21.8:1	No	9.0:1	No
Cyanides (3)	1.4:1	No	3.1:1	No
Fluoride	1.1:1	No	3.2:1	No
Lead (3)	< 1:1	No	1.2:1	No
4-Nitroaniline (2)	1.2:1	No	2.3:1	No
Nitrophenols (1)	6.1:1	No	4.3:1	No
Phenolics (2)	NS/C	--	1.6:1	No
Sulfates	NS/C	--	1.8:1	No
Total Dissolved Solids	NS/C	--	3.1:1	No
O-Xylene	< 1.1	No	1.1:1	No
M-Xylene	< 1:1	No	1.5:1	No
P-Xylene	2.4:1	No	7.0:1	No
Zinc (3)	16.0:1	No	1.7:1	No

NS/C = No standard and/or criteria available.

Footnotes:

(1) OCPSF parameters which, based on information furnished by the industrial contributors. will have significant concentration reductions in order to comply with the OCPSF categorical compliance standard of November 5, 1990.

(2) Parameters associated with OCPSF pretreatment requirements which, based on information furnished by the industrial contributors, are expected to be significantly reduced by November 5, 1990.

(3) Other parameters associated with OCPSF pretreatment requirements on which information was not furnished by the industrial contributors, but based on data obtained from POTW random sampling programs, are anticipated to experience concentration reductions, the extent of which is currently not known.

(4) Chemical compounds that are expected to have concentration reductions, the extent of which is currently not known, as a result of the anticipated significant reductions of other parameters which are subject to OCPSF pretreatment requirements as outlined in Footnote (2) above.

As can be noted in the above listing, the anticipated factor of 78:1 related to acute concerns and the dispersion factor of 369:1 related to chronic concerns, to be achieved through the proposed multi-port diffusion system, even after applying the above discussed dispersion safety factors, will provide adequate dispersion to satisfy the required dispersion factors for the critical parameters listed above, with the sole exception of aniline. For aniline, the required dispersion factor of 170:1 for acute standards and/or criteria exceeds the dispersion factor of 78:1 to be achieved through the proposed multi-port diffusion system. Excluding aniline, all of the remaining parameters have required dispersion factors of less than 22:1 for acute standards and/or criteria which is also less than the applied factor of safety dispersion factor of 39:1. With respect to chronic concerns, all of the parameters have required dispersion factors well below the dispersion factor of 369:1 which is also less than the applied factor of safety dispersion factor of 184:1. With the exception of aniline, all of the remaining parameters have required dispersion factors of less than 40:1.

Moreover, as shown above, further significant reduction in effluent concentrations will take place for the numerous parameters noted above that are also associated with OCPSF pretreatment standards currently requiring compliance by November 5, 1990. In particular, and as an example, it is anticipated that concentration reductions of 75 to 90 percent will take place for aniline.

In reference to USEPA guidance required pollutants of concern, item 3) above, the required dispersions related to acute and chronic standards and/or criteria concerns for arsenic, cyanide and silver are well below the dispersion factor to be achieved through the multi-port diffusion system. For cyanide the required dispersion factor of 1.4:1 is significantly less than the applied factor of safety dispersion factor of 39:1 for acute standards and/or criteria: and the required dispersion factor of 3.1:1 is also significantly less than the applied factor of safety dispersion factor of 184:1 for chronic standards and/or criteria. For arsenic and silver the required dispersion factors, as noted on Table 6, are less than 1:1 for both acute and chronic standards and/or criteria. Therefore arsenic, cyanide, and silver are pollutants of concern solely as required by the policy memorandum in program guidance. These parameters are further evaluated for allowable headworks concentration as required in the program guidance.

In reference to bioconcentration concerns, Item 4) above, the six parameters identified in Table 7 of Section III as potential pollutants of concern, Aldrin, Chlordane, 4'4'-DDD, 4'4'-DDT, Heptachlor and Phenanthrene were each undetected in the plant effluent, although detected at other locations in the plant on isolated occasions. Since they were undetected in the plant effluent, they are not considered as pollutants of concern but shall be monitored in the future as they relate to a potential cause for concern.

In summary, the "other" parameter determined to be a pollutant of concern, requiring further evaluation based on the rationale outlined above, was aniline, and will be further evaluated in Sub-Section E - Section IV to determine the potential need for local limits.

2. <u>Interference</u>

In accordance with the decision format, interference (inhibition to treatment processes) concerns were evaluated by considering the past history of plant operations and, in reference to average concentrations of the secondary influent, whether a parameter's average concentration was within reported inhibition ranges previously shown on Table 9 and as discussed in Section III.

Of the pollutants of concern listed above, the pollutant whose average recorded concentration was also within the range of inhibition is:

Zinc

3. Sludge

In accordance with the decision format, sludge concerns were evaluated based on a review of EP toxicity data as it relates to previous occurrences where the results of EP toxicity tests may have exceeded the associated limitations and/or where the maximum recorded EP toxicity value was within fifty (50) percent of the EP toxicity limitation on at least one occasion.

In reference to parameters with maximum recorded EP toxicity values that were within fifty (50) percent of the allowable, lead was the only parameter that fell within this range. However, this only occurred on one occasion, at a value of fifty-six (56) percent of the allowable. For both the ABTP and the P-Chem plant, no value exceeded the EP toxicity limitation. Furthermore, the next highest EP toxicity value was only twenty-four (24) percent of the limit. Because of this lead does not need to be further evaluated in respect to the need for local limits.

In accordance with the results of EP toxicity tests previously performed during the course of this study, and outlined on Tables 10 and 11 in Section III, exceedance of the associated limitations was not observed except during a period when cadmium excursions occurred. Since pretreatment and in plant controls for cadmium have been in place, all filter cake at the P-Chem plant has been tested by the EP toxicity test on a daily basis; and it has not been necessary to dispose of any sludge in a licensed RCRA facility as all sludge leaving the site has been below the limit for cadmium and all other parameters tested. Accordingly, no parameters were identified as pollutants of concern with respect to sludge considerations and no local limits based on sludge concerns are required at this time.

4. Worker Health and Safety

In accordance with the decision format. POTW worker safety concerns were evaluated based on past studies. As previously indicated and outlined in Section III, an evaluation of previously conducted industrial hygiene assessments was performed. As a result of these industrial hygiene assessments no compounds were found in concentrations exceeding limits established by the Occupational Safety and Health Administration (OSHA) or recommended by the American Conference of Governmental Industrial Hygienists (ACGIH). Accordingly, no parameters were identified as pollutants of concern based on worker health and safety and no local limits are required at this time.

D. Determination of Allowable Headworks Concentrations for Pollutants of Concern

Allowable headworks concentrations for the identified pollutants of concern must be developed to provide a basis for determining whether local limits are necessary.

In developing these allowable headworks concentrations, a variety of methods may be used. One such method is the use of median removal efficiencies to back an effluent standard/criterion through the plant to achieve an allowable influent concentration. This method has some shortcomings in that extremely high median removal efficiencies may yield unrealistically high allowable influent concentrations. In addition, median removal efficiencies which are 100% cannot be used in the back-calculations through the processes because they would require division by zero which is not possible. Finally, the median removal may not be representative of the actual removals which are occurring. This is particularly true when the relationship between the influent and the effluent is non-linear. This is the case for metals in the P-Chem plant where, generally speaking, the effluent concentration will be limited by the operating pH of the metals precipitation process and not by the influent concentration. In such cases, the use of median removals is not appropriate.

An alternative method which may be considered to determine allowable headworks concentrations is to base allowable headworks concentrations on existing average or maximum concentrations experienced and treated successfully by the plant. This method may, however, be overly conservative as it fails to consider that the plant may not have reached its treatment capacity for a particular parameter.

Given that no one method for determining allowable headworks concentrations is suitable for each pollutant of concern, it is most appropriate to look at each identified pollutant of concern on a case by case basis in order to use a combination of methods and best professional judgement (BPJ) for the development of allowable headworks concentrations. A case by case evaluation for each of the pollutants of concern identified in Sub-Section C was performed and the appropriate methodology devised for each such pollutant is set forth below.

1. Aniline - Aniline was present only in the P-Chem influent and not the AB primary influent, and therefore is a pollutant of concern only in the P-Chem headworks location. It has been identified as a pollutant of concern because the dispersion required to achieve the acute toxicity criterion was 170:1 which exceeded the 78:1 dispersion achievable with the proposed multi-port diffusion system. Because the median removal in the secondary process was 100%, an allowable headworks concentration could not be calculated by backing the allowable effluent concentration through the treatment processes.

In lieu of this, the allowable headworks concentration was determined by adjusting the existing recorded maximum influent concentration (20 mg/l), using a factor of safety of 10%, to a concentration level that will reduce the required dispersion factor to 78:1. This resulted in an allowable headworks concentration of 8 mg/l as follows:

$$20 \text{ mg/l } (78/170)(1 - 10\%) = 8 \text{ mg/l}$$

This methodology provides a reasonable allowable headworks concentration for several reasons. First, sampling results indicate that ten (10) out of twelve (12) of the events showed an influent concentration less than this value, one (1) equal to it, and one (1) exceeding it. The only value which caused aniline to require a dispersion factor greater than 78:1 was the 20 mg/l value. Also, removals of aniline through the secondary process are all quite high, even before the addition of powdered activated carbon since March 20, 1989. In addition, the sole industrial source of aniline anticipates a significant reduction of aniline in their wastestream upon the installation of OCPSF pretreatment equipment.

2. BOD - BOD was identified as a pollutant of concern based on NPDES excursions which have occurred.

The median removals reported for the treatment processes seem quite reasonable based on knowledge of the types of wastes being treated and the methods of treatment employed. The AB primary process removes 31% of the BOD influent to it. Since this waste is primarily domestic waste, this value is reasonable as it is in the range of typical removals of domestic source BOD by primary clarification. Likewise, the 94% median removal reported for the secondary process is typical for the removal of BOD by activated sludge. The removal for the P-Chem plant of 14% appears low for a settling process until it is taken into consideration that the settling which occurs is for the chemical precipitation of metals. The majority of the BOD entering the P-Chem plant is in the form of soluble organics which are not removed by settling. This low removal is therefore not a problem as the BOD remaining will be removed by the secondary process.

The plant secondary process, however, has a design capacity to accept a loading of 67,000 lbs/day. This figure was set as influent to the secondary process, and backed through the primary and P-Chem processes according to the recorded mass proportioned contributions from each process. This results in allowable headworks concentrations of 380 mg/l in the AB primary and 930 mg/l in the P-Chem Plant.

3. Cyanides - Cyanides are included as a pollutant of concern based on their mention in the James Elder policy memo (References at No. 44) as a pollutant to be evaluated.

In the P-Chem plant, every occurrence of cyanides in the influent has resulted in 100% removal. Cyanides were not detected on any occasion in the AB primary influent. Based on this, the use of median removals is not an appropriate model for computing the allowable headworks concentration.

The allowable headworks concentrations is set at the State standard of 10.0 mg/l for total cyanide as a daily maximum in both headworks locations.

4. Mercury - Mercury is identified as a pollutant of concern based on its inclusion in the James Elder policy memo.

Mercury was not found to be the source of any problems in the AB and P-Chem systems. The calculated median removals through all processes were 100.00%. Based on this, the use of median removals is not an appropriate model for computing the allowable headworks concentration.

The allowable headworks concentrations for total mercury is set at the existing alternate State standard of 0.006 mg/l as a daily maximum.

5. Phenolics - The inclusion of phenolics as a pollutant of concern is based on NPDES permit excursions which occurred.

Generally, removals of phenolics through the P-Chem and AB primary processes varied widely and the median removals were reported at or near zero.

The allowable headworks concentrations have been calculated using median removals based on the NPDES permit limits. These allowables are 0.34 mg/l for the AB primary headworks and 3.4 mg/l for the P-Chem headworks. It is anticipated that the installation of OCPSF pretreatment equipment will significantly reduce phenolics loadings to the P-Chem plant in the near future.

Past studies performed to specifically address phenolics indicated that lower removal efficiencies typically occurred at lower influent concentrations along with effluent excursions and that higher efficiencies occurred at higher influent concentrations and no excursions occurred. Because the test for phenolics detects a wide range of compounds, because lower ranges of influent concentration result in lower ranges of removal, and because phenolics are nonconservative, the model using median removals to back effluent concentrations throughout the treatment processes to achieve allowable influent concentrations is inappropriate in this case.

However, because no superior model has been identified, median removals were used to provide a basis for future monitoring and observations.

Heavy Metals - The remaining pollutants of concern are all heavy metals. Many of these are solely a pollutant of concern because of their inclusion in the policy memoranda in References at No. 44. The calculation of allowable headworks concentration is unique and general basis of this evaluation will be presented prior to specific discussion for each metal.

The Village of Sauget's Physical/Chemical Wastewater Treatment Plant (P-Chem) was specifically designed and is operated in a manner to remove heavy metals. The method of removal is by chemical precipitation caused by pH adjustment. The influent to the P-Chem plant is generally very acidic with numerous dissolved metals. This flow is neutralized and its pH is adjusted to approximately pH 8.5. Polymers are added to enhance clarification. The pH adjusted influent is then slowly mixed in flocculators and finally is allowed to settle for several hours in clarifiers.

The process of metals removal is such that for each metal there is a solubility limit at the operating pH of this plant. The control pH of 8.5 was selected by field evaluation of influent samples to maximize the overall metal removals. Essentially, so long as sufficient lime is added to maintain the control pH, within practical limits, the same effluent metal concentration will be obtained regardless of the influent metal concentration. For this reason, the median removal model for calculating allowable headworks concentrations is inappropriate for the P-Chem Plant and will not be used.

The policy memoranda in local limits guidance document (References at No. 44) direct the POTW to "determine, using the best information available, the maximum loading which can be accepted by the treatment facility without the occurrence of pass-through, interference, or sludge contamination." Within practical limitations, there is no limit on the allowable headworks concentration at the P-Chem Plant. Regardless of the influent concentration, there will not be pass-through, interference or sludge contamination.

Therefore in lieu of setting an allowable headworks concentration at the P-Chem Plant, a guideline for plant operations and pretreatment control is set. The intention of this guideline is that it be a monitoring tool for the P-Chem Plant manager and the ABTP pretreatment coordinator so that they might be aware of higher than normal influent metals concentration, and with this forewarning they may investigate the metal sources, if they deem it necessary. Since no other guidance is available, a factor of 1.5 times the observed maximum was selected for the guideline.

When computing the allowable headworks concentration for the ABTP, the median removal model is acceptable.

The above procedures were used to establish either allowable headworks concentrations at the ABTP or guideline values for the influent to the P-Chem Plant for arsenic, cadmium, chromium, copper, lead, nickel, silver, and zinc.

6. Arsenic - Arsenic was identified as a pollutant of concern solely on the basis of the policy memorandum in the guidance manual (References at No. 44).

As an estimate of the maximum allowable headwork concentration at the ABTP primaries, the inhibition level of arsenic to activated sludge was used as a starting point. The reported value was 0.1 mg/l. Using the median removal of 28.6%, the allowable headworks concentration is 0.14 mg/l. The observed maximum influent concentration appears to be an anomaly. The next higher influent concentration for arsenic was only 0.032 mg/l.

For the P-Chem Plant, the maximum observed influent concentration was 0.615 mg/l. The guidance value for arsenic is then 0.92 mg/l.

7. Cadmium - Cadmium was identified as a pollutant of concern due to the excursions of the EP Toxicity limits for the sludge at the P-Chem Plant and due to its inclusion in the policy memorandum of the guidance manual.

The EP Toxicity excursions which occurred could not be correlated to any increase in influent concentrations or loadings. In fact, no relationship was identifiable. Therefore, this data could not be used to develop allowable headworks concentrations.

As an estimate of the maximum allowable headwork concentration at the ABTP primaries, the inhibition level of cadmium to activated sludge was used as a starting point. The reported values were 1 to 10 mg/l. Using the mid-value inhibition level, 5 mg/l, and the median removal of 16.7%, the calculated allowable headworks concentration is 6.0 mg/l. Since the observed maximum influent concentration was 0.07 mg/l, the guidance value concentration was set to 0.35 mg/l (the P-Chem guidance value).

For the P-Chem Plant, the maximum observed influent concentration was 0.21 mg/l. The guidance value for cadmium is then 0.35 mg/l.

8. Chromium - Chromium was identified as a pollutant of concern solely on the basis of the policy memorandum in the guidance manual (References at No. 44).

As an estimate of the maximum allowable headwork concentration at the ABTP primaries, the inhibition level of total chromium to activated sludge was used as a starting point. The reported values were 1 to 100 mg/l. Using the mid-value inhibition level, 50 mg/l, and the median removal of 43.4%, the calculated allowable headworks concentration is 88 mg/l. Since the observed maximum influent concentration was 1.4 mg/l, the guidance value was set to 2.1 mg/l (1.5 times observed maximum value).

For P-Chem Plant, the maximum observed influent concentration was 0.46 mg/l. The guidance value for chromium is then 0.69 mg/l.

9. Copper - Copper was identified as a pollutant of concern solely on the basis of the policy memorandum in the guidance manual (References at No. 44).

As an estimate of the maximum allowable headwork concentration at the ABTP primaries, the reported inhibition level of copper to activated sludge was used as a starting point. The reported value was 1.0 mg/l. Using the median removal of 29.2%, the allowable headworks concentration is 1.4 mg/l.

For the P-Chem Plant, the maximum observed influent concentration was 4.0 mg/l. The guidance value for copper is then 6.0 mg/l.

10. Lead - Lead was identified as a pollutant of concern solely on the basis of the policy memorandum in the guidance manual (References at No. 44).

As an estimate of the maximum allowable headwork concentration at the ABTP primaries, the inhibition level of lead to activated sludge was used as a starting point. The reported values were 0.1 to 100 mg/l. Using the mid-value inhibition level, 5 mg/l, and the median removal of 57.5%, the calculated allowable headworks concentration is 12 mg/l. Since the observed maximum influent concentration was 0.14 mg/l, the guidance value was set to 1.8 mg/l (the P-Chem guidance value).

For the P-Chem Plant, the maximum observed influent concentration was 1.2 mg/l. The guidance value for lead is then 1.8 mg/l.

11. Nickel - Nickel was identified as a pollutant of concern solely on the basis of the policy memorandum in the guidance manual (References at No. 44).

As an estimate of the maximum allowable headwork concentration at the ABTP primaries, the inhibition level of nickel to activated sludge was used as a starting point. The reported values were 1 to 5 mg/l. Using the mid-value inhibition level, 3 mg/l, and the median removal of 9.1%, the calculated allowable headworks concentration is 3.3 mg/l.

For the P-Chem Plant, the maximum observed influent concentration was 4.8 mg/l. The guidance value for nickel is then 7.2 mg/l.

12. Silver - Silver was identified as a pollutant of concern solely on the basis of the policy memorandum in the guidance manual (References at No. 44).

For the P-Chem Plant, the maximum observed influent concentration was 0.29 mg/l. The guidance value for silver is then 0.44 mg/l.

Silver was never detected in the ABTP primary influent and the use of median removals is meaningless. Therefore, the P-Chem Plant guidance value is also set for a guidance value for the ABTP headworks.

13. Zinc - Zinc was identified as a pollutant of concern due to a single excursion of its NPDES limit and due to its inclusion in the policy memorandum of the guidance manual.

As an estimate of the maximum allowable headwork concentration at the ABTP primaries, the inhibition level of zinc to activated sludge was used as a starting point. The reported values were 0.08 to 10 mg/l. Using the mid-value inhibition level, 1 mg/l, and the median removal of 47.1%, the calculated allowable headworks concentration is 1.9 mg/l.

For the P-Chem Plant, the maximum observed influent concentration was 79 mg/l. The guidance value for zinc is then 118 mg/l.

E. **Determination of the Need for Local Limits**

Each parameter determined to be a pollutant of concern (as identified in Sub-Section C of this Section IV) was subjected to further evaluation to determine whether a local limit was necessary. The determination made concerning the need for a local limit as to each such pollutants of concern is discussed below.

1. Pass-through

In accordance with the decision format, the following parameters were identified as pollutants of concern requiring further evaluation:

BOD_5	Lead
Cadmium	Mercury
Chromium	Nickel
Copper	Phenols
	Zinc

a. NPDES Parameters:

As discussed in Sub-Section C of this Section IV, cadmium, chromium, copper, lead, nickel and mercury were required to be evaluated as pollutants of concern in the USEPA policy memoranda. However, upon conducting such evaluation, it was determined that local limits for these parameters are not required due to pass through concerns because: 1) their average influent concentrations did not fall within fifty (50) percent of the allowable headworks concentrations as indicated on Table 16; and 2) excursion to the NPDES limits for these parameters did not occur in the period evaluated. This is in accordance with the decision format previously established.

In reference to BOD, the plant experienced excursions to its maximum daily NPDES limitation, due to operational problems relating to oxygen transfer to the aeration process and temperature, on fourteen (14) days during the period reviewed. Subsequent to the period reviewed, additional operational control was implemented at ABTP that has demonstrated that the facility is now capable of accepting the higher BOD loadings without experiencing NPDES excursions. The additional operational control includes closer attention to oxygen requirements when ambient temperature is low and higher oxygen demand is needed. The plant has the capability, with its existing aeration facilities, to increase the oxygen transferred to the aeration process during periods of increased oxygen demand as outlined above. Based on the proven performance of the ABTP to accept and treat the higher BOD loadings, specific local limits to prevent pass-through for BOD are not needed at this time.

In reference to zinc, the daily maximum NPDES limit was exceeded on June 8, 1988. This excursion was an isolated event and no other zinc excursion occurred during the study year. The operation and monitoring data for the P-Chem plant and ABTP were reviewed. At that time, zinc was analyzed only on the P-Chem Plant effluent and the ABTP plant effluent with measured values of 1.79 mg/l and 3.36 mg/l, respectively. This would indicate that the probable source was from the ABTP primary system and either from the East St. Louis or Cahokia sewer system. The suspended solids were extremely high at the Cahokia Pump Station. The situation is further complicated by a 1.26 inch rain (measured at St. Louis International Airport). The flows on this date are the highest for the month at 24.6 MGD.

Since this was the only instance of a zinc excursion in over 360 measured effluent samples during the study period, since the specific instance is very complex and the cause of the exceedence is unknown, and since the P-Chem Plant and ABTP have demonstrated the ability to remove this pollutant, specific local limits for zinc are not required.

In references to phenols, maximum daily excursions occurred in May 1988 four (4) times; June 1988 three (3) times; August 1988 two (2) times; and in October 1988 two (2) times. The maximum day excursions in May 1988 caused an average monthly excursion to the permit limit. In reference to these excursions for phenols, enforcement action under the pretreatment program resulted in the reduction of phenols discharged by the source industries, since which no further excursions have occurred and local limits for phenols was not required as previously addressed and documented in a letter to USEPA dated August 16, 1989, included in this report as Appendix I. The letter outlined reasons why local limits for phenols are not required, including the discussions held with USEPA representatives during the June 1989 Pretreatment Program Audit in which it was concluded that USEPA-Region 5 shared the conclusion that local limits for phenols are not justified.

Also, as established in the decision format or by program guidance, an evaluation concerning allowable headworks concentrations for each NPDES parameter as they relate to existing average headworks concentrations, was performed. This evaluation is presented in Table 16. As shown in Table 16, the existing average headworks concentrations were compared to allowable headworks concentrations. For those parameters whose existing average concentration was greater than or equal to fifty (50) percent of the allowable headworks concentration, local limits would be recommended. Based on this rationale, no parameters were identified as requiring a specific local limit at this time.

b. <u>Other Parameters</u>: In accordance with the decision format, the only "other" parameter identified as a pollutant of concern requiring further evaluation was aniline. The evaluation of aniline concluded that a local limit is required because the required dispersion factor for aniline exceeds the dispersion factor obtainable by the multi-port diffusion system. This local limit would be applied to the P-Chem influent. In addition, and as previously discussed in this section, the anticipated reduction of aniline due to compliance with OCPSF regulations by November 5, 1990 is 75-90 percent. This indicates that aniline influent concentrations will be reduced after the OCPSF compliance date to a point that will make a local limit for aniline after November 5, 1990 realistically unnecessary.

TABLE 16

MAXIMUM AND AVERAGE INFLUENT CONCENTRATIONS AS A PERCENT OF THE ALLOWABLE HEADWORKS CONCENTRATION FOR NPDES PARAMETERS THAT ARE POLLUTANTS OF CONCERN

NPDES Parameter (4)	Allowable (1) ABTP Primary Influent Concentration (mg/l)	Maximum ABTP Primary Influent Concentration (mg/l)	Percent of Allowable	Average (2) ABTP Primary Influent Concentration (mg/l)	Percent of Allowable	Allowable (3) P-Chem Influent Concentration (mg/l)	Maximum P-Chem Influent Concentration (mg/l)	Percent of Allowable	Average (2) P-Chem Influent Concentration (mg/l)	Percent of Allowable
BOD	380	300	78.9	89	23.4	930	480	51.6	240	25.8
Cadmium	0.35	0.07	20.0	0.011	3.1	0.35	0.21	60.0	0.036	10.3
Chromium, Total	2.1	1.4	66.7	0.27	12.9	0.69	0.46	66.7	0.21	30.4
Copper	1.4	0.08	5.7	0.053	3.8	6.0	4.0	66.7	1.5	25.0
Lead	1.8	0.14	7.8	0.038	2.1	1.8	1.2	66.7	0.24	13.3
Mercury	0.0060	0.0006	10.0	0.0001	1.7	0.0060	0.005	83.3	0.002	33.3
Nickel	3.3	0.066	2.0	0.028	0.8	7.2	4.8	66.7	0.89	12.4
Phenolics	0.34	0.12	35.3	0.085	25.0	3.4	1.8	52.9	1.1	32.4
Zinc	1.9	0.44	23.2	0.17	8.9	118	79	66.9	4.7	4.0

Notes:

(1) Limits are based on minimum allowable influent concentrations.
(2) Averages are calculated using Gulf Coast data or AB data. Values are rounded to two significant figures.
(3) Limits based on rationale presented in the text.
(4) Evaluation not performed for suspended solids, iron, oil and grease, pH, fecal coliforms, and chlorine residual, since these are not considered as pollutants of concern.

2. Interference

As previously discussed in Sub-Section C of this Section IV, zinc was identified as a pollutant of concern based on reported inhibition ranges. Accordingly, a review and evaluation was performed to determine if interference actually occurred at ABTP or the P-Chem plant during periods when the above mentioned pollutant of concern was detected within the inhibition range as previously outlined on Table 9. There were no reported instances of interference occurring during these periods and no correlation and/or determination could be made that would indicate interference occurring as a direct result of high influent concentrations of zinc. Based on this evaluation the past operational history indicates that the plants can accept this parameter at the concentrations indicated. Therefore, no local limits are necessary for this parameter based on interference concerns. This parameter will be monitored and evaluated in the future in order to monitor the continuing lack of interference occurring at the plants. This is consistent with guidance provided by USEPA in their "Guidance Manual on the Development and Implementation of Local Discharge Limitations under the Pretreatment Program" (References at No. 44, p. 30). If future instances of interference are discovered due to high concentrations of this parameter, limits then can be established accordingly.

3. Sludge

As previously discussed in Sub-Section C of this Section IV, no pollutants of concern based on sludge concerns were identified, and therefore, no local limits are necessary at this time.

4. Worker Health and Safety

As previously discussed in Sub-Section C of this Section IV, no pollutants of concern based on worker health and safety concerns were identified, and therefore, no local limits are necessary at this time.

The recommended local limits for the parameters discussed above that need local limits at this time, the recommended allocation procedure of local limits to industrial sources, and the recommended allocation procedure of local limits to industrial sources, and the recommended monitoring and enforcement procedures are outlined in Section V of this report. Also presented in Section V is a tabular form outline of the recommended allowable influent concentrations for all pollutants previously identified as pollutants of concern; the most restrictive standard or criteria on which the allowable influent concentrations were based; and an identification of which of these allowable influent concentrations necessitate setting of a local limit at this time.

V. SUMMARY AND RECOMMENDATIONS

A. Summary

Sampling programs and technical methodology to allow for the development of local limits as required by the General Pretreatment Regulations of 40 CFR 403 were established in the approved Pretreatment Program. The required sampling, analyses and evaluation were performed and the results included in this report.

The purpose of this report has been to present the results of the sampling performed, to identify pollutants of concern and their applicable standards, to develop allowable headworks concentrations, and to propose local industrial limits as a control mechanism for those pollutants of concern which will pass through the treatment works, which will interfere with the operation of the ABTP, including interference with its sludge digestion processes, sludge use or disposal; which are otherwise incompatible with such works; or to protect the water quality of the Mississippi River.

Specific activities have included:

1. Tabulation and evaluation/analysis of the results of the twelve month fate and effect sampling program, and other sampling programs where applicable;

2. Identification of parameters present in the system which are potential pollutants of concern with respect to sludge, treatment processes, effluent quality, or the quality of the receiving waters based on published standards and criteria, and their sources as determined from POTW Random Sampling performed during 1988 and 1989;

3. Calculation of removal efficiencies of influent parameters through the individual treatment processes and comparison of these values to published or anticipated values;

4. Identification of pollutants of concern based on pass-through, interference, sludge, and POTW worker health and safety concerns;

5. Determination of allowable headworks concentrations for pollutants of concern based on applicable sludge or water quality standards/criteria, calculated removal efficiencies or other bases; and

6. Comparison of allowable headworks concentrations to the current influent levels in the American Bottoms and Sauget Physical-Chemical plants.

B. <u>Recommended Local Limits</u>

As previously outlined in Section IV, the established decision format was used to identify pollutants of concern and, as to each such pollutant of concern, evaluate and determine the need for local limits based on four (4) general areas of concern i.e., pass through, interference, sludge, and POTW worker health and safety. In conjunction with the decision format, additional program guidance as stated in a USEPA memorandum dated August 5, 1985 (References at No. 44) was also used to evaluate and determine the need for local limits. That memorandum specifically outlines the following consideration: "A POTW that proposes to rely solely upon the application of the specific prohibitions listed in 403.5 (b) and categorical pretreatment standards in lieu of numerical local limits should demonstrate in its program submission that (1) it has determined the capability of the treatment facility to accept the industrial pollutants of concern, (2) it has adequate resources and procedures for monitoring and enforcing compliance with these requirements, and (3) full compliance with the applicable categorical standards will meet the objectives of the pretreatment program."

The evaluation and resultant recommendation as outlined in Section IV, for each general area of concern is summarized below.

1. Pass Through (NPDES parameters)

In reference to pass through and as it relates to NPDES parameters, a review of the Past History of Exceedances and an evaluation of allowable headworks concentrations as they relate to existing average influent concentrations was performed. Based on a review of past violations, the operational problems causing these violations, and the corrective operational controls since implemented as they relate to "the capability of the treatment facility to accept the industrial pollutants of concern," the evaluation concluded that local limits for NPDES parameters as they relate to the decision format concerning Past History of Exceedances are not required at this time. In addition, and based on the decision format outlined in Section IV relating to existing average influent concentrations (i.e. existing average concentration within 50% of allowable headworks concentration), it was also recommended that special local limits based on the 50% rationale would not be required at this time because no existing average influent concentration of any pollutant of concern exceeded 50% of the allowable headworks concentration for that parameter.

In reference to pass through, as it relates to "other parameters", which include acute, chronic, and bioconcentration concerns, an additional evaluation and review was performed. That review and evaluation concluded, based on mixing zone considerations and the anticipated dispersion obtainable from the multi-port diffusion system, that aniline, based on acute toxicity concerns, was the only parameter needing a local limit.

2. Interference

In reference to interference concerns, an evaluation and review was conducted, as outlined in Section IV, based on the past history of plant operations. That evaluation and review concluded that no direct correlation was determined that would indicate inhibition occurring as a result of influent concentrations of certain pollutants of concern whose recorded average concentrations fell within previously reported potential ranges of inhibition levels. Therefore, no local limits are necessary for the pollutant of concern previously identified, i.e. zinc, but this parameter will be monitored in the future and, if inhibition should occur, local limits can then be established based on such future data.

3. Sludge

In reference to sludge concerns, an evaluation and review was conducted based on EP toxicity test results. That evaluation and review concluded that local limits related to sludge concerns are not needed at this time because prior exceedances of EP toxicity limitations have been previously corrected by Pretreatment Program efforts. This decision is supported by the program guidance memorandum referenced above in that the POTW "...has adequate resources and procedures for monitoring and enforcing compliance with these requirements." As outlined in the decision format, sludge concerns may need to be reevaluated if regulatory guidelines concerning sludge issues change in the future.

4. POTW Worker Health and Safety

In reference to POTW worker health and safety concerns, an evaluation and review was based on previously conducted industrial hygiene assessments. As a result of these industrial hygiene assessments no compounds were identified which would cause a current need to set local limits for this area of concern. However, routine industrial hygiene assessments will be continued in the future and evaluated to determine whether future events create any subsequent need for local limits relating to worker health and safety concerns.

As required to conduct the evaluations performed in this study and as required by program guidance, allowable headworks concentrations for pollutants of concern were prepared as previously outlined in this report. A summary of the allowable headworks concentrations for pollutants of concern is outlined in Table 17, presented at the end of this section. The allowable headworks concentrations were developed using median removal efficiencies where applicable and/or using the rationales presented in Section IV of this report.

C. Identification of Probable Industrial Sources and Allocation to Industrial Sources

If a parameter was identified as requiring a limit, the discharge of each industrial user in which that parameter was detected was evaluated to determine whether their average "fenceline" concentration for that parameter exceeded ten percent (10%) of the previously determined allowable headworks concentration. The average "fenceline" concentration was determined by utilizing the concentrations obtained from various sampling programs in which samples were obtained from the main industrial sewer at the industrial property line just prior to connection with the POTW sewer system. Where an industrial user's average fenceline concentration exceeded ten percent (10%) of the allowable headworks concentration, the industrial user was identified as a source industry for which a specific local limit is recommended. Industries whose average fenceline concentrations were less than ten percent (10%) of the critical headworks concentrations are considered minor contributors to the mass loading of the particular parameter in question and are considered as "background" contributors, except for particular industries whose "maximum" recorded fenceline concentrations were an area of potential concern. Those industries that are a potential concern based on their maximum concentrations previously recorded are also identified as source industries where specific local limits are recommended.

The POTW random sampling program data was utilized for evaluation and comparison of "fenceline" concentrations. Both flow proportionate and mass proportionate evaluations were made and compared to determine which method presented the most technically sound and practical approach to use for development of specific local limits as it relates to aniline at the P-Chem headworks location. Based on this evaluation a flow proportionate rational was used to evaluate the distribution of the allowable headworks concentrations of each parameter requiring a limit to the source industries identified. This method distributes the total allowable headworks loading based on the proportion of the specific industrial flow to the total flow of the source industries. Background concentrations and their associated mass loading, from those industries identified as background contributors and from domestic sources, were subtracted from the allowable loading with the remaining loading being allocated to contributing industries identified as source industries. Based on this allocation, concentration based limits were derived for the source industries.

In accordance with the USEPA program guidance manual (References at No. 44), the allocated headworks concentrations were then reduced by a factor of ten percent (10%) to provide a measure of safety.

The summary results of the allocation procedure discussed above as they relate to the parameter to be limited, the associated headworks location, and the recommended local limit for the source industry are presented below:

Industry	Associated Headworks Location	Parameter - Local Limit
Monsanto	P-Chem Influent	Aniline - 10 mg/l[1]

(1) Includes 10% factor of safety.

Since there was only one (1) industrial source of aniline, the mass load from background contributors was zero, thus the total mass load was proportioned to the single source industry. Also, it should be noted that the existing industrial user permit for Monsanto, Permit No. 105, dated August 1, 1989, contains a schedule for compliance with the OCPSF categorical pretreatment requirement by November 5, 1990. Upon compliance with the OCPSF categorical pretreatment requirement, it is expected that Monsanto's discharge will be below the aniline local limit set forth above.

The discharges of other industries for which no specific local limit is proposed were evaluated as presented in U.S. EPA policy memoranda dated August 5, 1985 and March 22, 1987 which are contained in the USEPA program guidance manual. These memoranda suggest that it may be appropriate for a

POTW to limit each significant discharger to a maximum loading which cannot be exceeded without POTW approval (References at No. 44). The results of the POTW random sampling and other available data were reviewed, and there is no evidence that any other discharge from an industrial contributor contains aniline. Based upon this information, additional limits are not necessary.

In regard to other pollutants of concern, the above guidance recommends that "...POTW's establish maximum limits for significant dischargers with such pollutants. This will ensure that current loadings cannot be substantially increased without the POTW's granting permission..."

As part of the American Bottom's pretreatment program, all pollutants of concern will be evaluated using the allowable headworks concentrations summarized on Table 17. Maximum loading or concentrations for pollutants of concern will be developed for each significant discharger and added to their permit at its next reissuance. These maximum loadings may not be exceeded without ABTP's prior approval. This program will ensure that the current loadings of pollutants of concern cannot be substantially increased without ABTP's granting permission and having the opportunity to assess both the loadings from other industrial sources as well as the need to provide for future industrial growth. Appropriate wording to this effect will be incorporated into all industrial permits to allow for evaluation of changes by permit control.

D. Monitoring and Enforcement

A monitoring system will be established for each industrial user that has an established local limit. This monitoring program consists of obtaining a sample and testing for the parameters along with and at a similar frequency as other parameters identified in the various wastewater discharge permits.

American Bottoms and/or other pretreatment personnel will also perform sampling and testing to assure accuracy and uniformity of self monitoring results. The cost of such a sampling and testing program will be shared by the monitored contributors.

Any violation of a parameter local limit will be considered an instance of noncompliance for which the industrial user is subject to enforcement procedures. However, instances of irregularity of effluent quality or error in sampling or analysis procedures are likely to produce an occasional violation. Therefore, patterns of violations of a local limit by industrial users that are instances of significant noncompliance (SNC) should be identified and differentiated from an isolated excursion. The SNC classification allows for the establishment of formal enforcement actions. SNC of a local limit will occur if: a) sixty-six percent or more of the test results over any six-month sampling period exceed the daily maximum or daily average allocation (any magnitude of exceedance) of the parameter discharge for that particular industry; and/or b) thirty-three percent or more of the test results over any sampling period exceed the daily maximum or daily average allocation of parameter discharge for that particular industry by more than the Technical Review Criteria (TRC). The TRC shall be defined as 1.4 times the daily maximum or daily average allocation for conventional pollutants (BOD, TSS, Oil and Grease) or 1.2 times said allocation for all other parameters. The establishment of SNC criteria for evaluation of compliance and subsequent enforcement action is supported in the American Bottoms Pretreatment Program (Part 5.10 of the Standard Operating Procedures) and the USEPA guidance document, "Pretreatment Compliance Monitoring and Enforcement Guidance" (Section 3.4).

E. Periodic Re-evaluation of Allowable Headworks Concentrations and Local Limits

While this study has been comprehensive in the evaluation and development of allowable headworks concentrations and the recommended local limits, future changes in the treatment plant may warrant that additional consideration be given to these factors in the future. Changes in the process and/or headworks concentrations may affect removals achieved in the secondary process, resulting in changes in the allowable headworks concentrations required.

Local limits will be reviewed if a major change occurs in POTW plant operation, in applicable regulations, in current industrial flows and concentrations, and/or in other future industrial considerations concerning existing facilities or new industrial sources. Allowable headworks concentrations, as presented on Table 17, will be reviewed as compared to changes in headworks concentrations and the local limit decision format, to determine if changes in the actual headworks concentrations are cause for setting additional local limits and/or modifying any of those previously implemented.

As previously discussed, the proposed installation of the multi-port diffusion system and the soon to be installed pretreatment facilities to comply with the OCPSF regulations will have a significant effect and impact on effluent and influent characteristics, respectively. Those parameters which have been identified as pollutants of concern will be monitored in the influents to the plants to confirm the expectations presented in this report.

CER 055488

TABLE 17

SUMMARY OF ALLOWABLE HEADWORKS CONCENTRATION AND RECOMMENDED LIMITS FOR POLLUTANTS OF CONCERN

Parameter	Allowable ABTP Primary Headworks Concentration (mg/l) (1)	ABTP Primary Headworks Concentration (mg/l) AVG	ABTP Primary Headworks Concentration (mg/l) MAX	Limit Needed ? (Y/N)	Allowable Headworks Concentration Basis	Allowable P Chem Headworks Concentration (mg/l) (1)	P Chem Headworks Concentration (mg/l) AVG	P Chem Headworks Concentration (mg/l) MAX	Limit Needed ? (Y/N)	Allowable Headworks Concentration Basis
Aniline	--	0.000	0.000	N	(2)	8	5.1	20	Y	Acute Toxicity
Arsenic	0.14	0.043	0.35	N	Activated Sludge	0.92	0.17	0.615	N	--
BOD	380	89	300	N	Design Capacity	930	240	480	N	Design Capacity
Cadmium	0.35 (3)	0.011	0.070	N	--	0.35 (3)	0.036	0.21	N	--
Chromium, Total	2.1 (3)	0.27	1.4	N	--	0.69 (3)	0.21	0.46	N	--
Copper	1.4	0.053	0.08	N	Activated Sludge	6.0 (3)	1.5	4.0	N	--
Cyanides, Total	10.0	0.000	0.000	N	State Standard	10.0	0.002	0.02	N	State Standard
Lead	1.8 (3)	0.038	0.14	N	--	1.8 (3)	0.24	1.2	N	--
Mercury	0.0060	0.0001	0.0006	N	State Standard	0.0060	0.0018	0.0053	N	State Standard
Nickel	3.3	0.028	0.066	N	Activated Sludge	7.2 (3)	0.89	4.8	N	--
Phenolics	0.34	0.085	0.12	N	NPDES	3.4	1.1	1.8	N	NPDES
Silver	0.44 (3)	0.000	0.000	N	--	0.44 (3)	0.037	0.29	N	--
Zinc	1.9	0.17	0.44	N	Activated Sludge	118 (3)	4.7	79	N	-

NOTES:

1. The allowable headworks concentrations shown are as previously developed.
2. Where analytical results showed zero influent concentration, no limit is required as the parameter was not found in that wastestream, and therefore the parameter is not a pollutant of concern in the indicated headworks location.
3. Values are guidelines for plant operation and pretreatment control and are not allowable headworks concentration.

APPENDIX A-1

RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

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RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
	SAMPLE LOCATION NO:			1	2	3	4	5	8	9	10	11
1,1,1-Trichloroethane	MAY	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
1,1,1-Trichloroethane	JUNE	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	3	0 (9)	0 (9)
1,1,1-Trichloroethane	JULY	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
1,1,1-Trichloroethane	AUGUST	VOL	ug/l	0 (9)	510	7	0 (9)	0 (9)	0 (9)	11	0 (9)	0 (9)
1,1,1-Trichloroethane	SEPTEMBER	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
1,1,1-Trichloroethane	OCTOBER	VOL	ug/l	120	0 (9)	0 (9)	0 (9)	27	29	6	15	3
1,1,1-Trichloroethane	NOVEMBER	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
1,1,1-Trichloroethane	DECEMBER	VOL	ug/l	6100	320	7	5	7	7	5	0 (9)	0 (9)
1,1,1-Trichloroethane	JANUARY	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
1,1,1-Trichloroethane	FEBRUARY	VOL	ug/l	0 (9)	0 (9)	2	2	0 (9)	2	2	0 (9)	0 (9)
1,1,1-Trichloroethane	MARCH	VOL	ug/l	0 (9)	0 (9)	4	12	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
1,1,1-Trichloroethane	APRIL	VOL	ug/l	0 (9)	0 (9)	4	0 (9)	0 (9)	5	0 (9)	3	0 (9)
1,2-Dichlorobenzene	MAY	SEMI	ug/l	1000	470	0 (9)	0 (9)	66	79	52	90	9
1,2-Dichlorobenzene	JUNE	SEMI	ug/l	1000	770	0 (9)	0 (9)	44	88	53	88	0 (9)
1,2-Dichlorobenzene	JULY	SEMI	ug/l	1100	670	5	4	62	85	58	230	17
1,2-Dichlorobenzene	AUGUST	SEMI	ug/l	350	290	1	2	40	43	37	64	7
1,2-Dichlorobenzene	SEPTEMBER	SEMI	ug/l	220	290	4	3	44	61	73	260	13
1,2-Dichlorobenzene	OCTOBER	SEMI	ug/l	340	150	0 (9)	0 (9)	16	36	27	96	0 (9)
1,2-Dichlorobenzene	NOVEMBER	SEMI	ug/l	1400	150	0 (9)	0 (9)	23	43	23	300	24
1,2-Dichlorobenzene	DECEMBER	SEMI	ug/l	880	460	0 (9)	0 (9)	79	120	99	210	10
1,2-Dichlorobenzene	JANUARY	SEMI	ug/l	100	89	0 (9)	1	15	22	30	400	0 (9)
1,2-Dichlorobenzene	FEBRUARY	SEMI	ug/l	280	99	0 (9)	0 (9)	23	45	21	29	2
1,2-Dichlorobenzene	MARCH	SEMI	ug/l	390	150	0 (9)	0 (9)	25	55	21	130	0 (9)
1,2-Dichlorobenzene	APRIL	SEMI	ug/l	1100	190	0 (9)	0 (9)	9	45	6	650	0 (9)
1,3-Dichlorobenzene	MAY	SEMI	ug/l	31	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
1,3-Dichlorobenzene	JUNE	SEMI	ug/l	55	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
1,3-Dichlorobenzene	JULY	SEMI	ug/l	0 (9)	19	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
1,3-Dichlorobenzene	AUGUST	SEMI	ug/l	20	14	0 (9)	0 (9)	0 (9)	2	0 (9)	0 (9)	0 (9)
1,3-Dichlorobenzene	SEPTEMBER	SEMI	ug/l	8	9	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
1,3-Dichlorobenzene	OCTOBER	SEMI	ug/l	0 (9)	9	0 (9)	0 (9)	0 (9)	0 (9)	1	0 (9)	0 (9)

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PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
	SAMPLE LOCATION NO:			1	2	3	4	5	8	9	10	11
1,3-Dichlorobenzene	NOVEMBER	SEMI	ug/l	210	17	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
1,3-Dichlorobenzene	DECEMBER	SEMI	ug/l	25	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	2	0 (9)	0 (9)
1,3-Dichlorobenzene	JANUARY	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.900	0 (9)	0 (9)	0 (9)
1,3-Dichlorobenzene	FEBRUARY	SEMI	ug/l	14	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
1,3-Dichlorobenzene	MARCH	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	2	0 (9)	0 (9)
1,3-Dichlorobenzene	APRIL	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
1,4-Dichlorobenzene	MAY	SEMI	ug/l	1200	430	0 (9)	0 (9)	56	66	45	78	0 (9)
1,4-Dichlorobenzene	JUNE	SEMI	ug/l	740	590	0 (9)	0 (9)	40	82	55	94	13
1,4-Dichlorobenzene	JULY	SEMI	ug/l	740	510	0 (9)	0 (9)	50	68	51	200	14
1,4-Dichlorobenzene	AUGUST	SEMI	ug/l	270	190	2	2	22	25	19	38	4
1,4-Dichlorobenzene	SEPTEMBER	SEMI	ug/l	240	190	2	0 (9)	19	28	31	110	6
1,4-Dichlorobenzene	OCTOBER	SEMI	ug/l	550	270	0 (9)	0 (9)	0 (9)	45	40	140	0 (9)
1,4-Dichlorobenzene	NOVEMBER	SEMI	ug/l	2100	200	0 (9)	0 (9)	27	0 (9)	0 (9)	360	27
1,4-Dichlorobenzene	DECEMBER	SEMI	ug/l	350	210	0 (9)	0 (9)	0 (9)	49	42	81	4
1,4-Dichlorobenzene	JANUARY	SEMI	ug/l	150	110	0 (9)	2	14	22	29	400	0 (9)
1,4-Dichlorobenzene	FEBRUARY	SEMI	ug/l	340	120	0 (9)	0 (9)	25	62	26	47	6
1,4-Dichlorobenzene	MARCH	SEMI	ug/l	960	340	0 (9)	0 (9)	45	150	39	290	5
1,4-Dichlorobenzene	APRIL	SEMI	ug/l	1800	280	0 (9)	3	15	120	13	1600	0 (9)
2,4-Dichlorophenol	MAY	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2,4-Dichlorophenol	JUNE	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2,4-Dichlorophenol	JULY	SEMI	ug/l	0 (9)	28	0 (9)	0 (9)	0 (9)	8	12	0 (9)	0 (9)
2,4-Dichlorophenol	AUGUST	SEMI	ug/l	0 (9)	14	0 (9)	0 (9)	0 (9)	6	0 (9)	0 (9)	0 (9)
2,4-Dichlorophenol	SEPTEMBER	SEMI	ug/l	32	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2,4-Dichlorophenol	OCTOBER	SEMI	ug/l	0 (9)	16	0 (9)	0 (9)	0 (9)	0 (9)	5	0 (9)	0 (9)
2,4-Dichlorophenol	NOVEMBER	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2,4-Dichlorophenol	DECEMBER	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2,4-Dichlorophenol	JANUARY	SEMI	ug/l	22	17	0 (9)	0 (9)	0 (9)	3	0 (9)	0 (9)	0 (9)
2,4-Dichlorophenol	FEBRUARY	SEMI	ug/l	0 (9)	14	0 (9)	4	0 (9)	0 (9)	0 (9)	0 (9)	31
2,4-Dichlorophenol	MARCH	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	3	0 (9)	0 (9)
2,4-Dichlorophenol	APRIL	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)

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PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
	SAMPLE LOCATION NO:			1	2	3	4	5	8	9	10	11
2-Butanone	MAY	VOL	ug/l	0 (9)	0 (9)	15	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Butanone	JUNE	VOL	ug/l	0 (9)	0 (9)	65	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Butanone	JULY	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Butanone	AUGUST	VOL	ug/l	0 (9)	0 (9)	0 (9)	19	0 (9)	0 (9)	6	0 (9)	0 (9)
2-Butanone	SEPTEMBER	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Butanone	OCTOBER	VOL	ug/l	400	0 (9)	7	27	59	76	17	16	9
2-Butanone	NOVEMBER	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Butanone	DECEMBER	VOL	ug/l	78000	18000	0 (9)	0 (9)	91	0 (9)	69	55	0 (9)
2-Butanone	JANUARY	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
?-Butanone	FEBRUARY	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Butanone	MARCH	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Butanone	APRIL	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Chlorophenol	MAY	SEMI	ug/l	53	0 (9)	0 (9)	0 (9)	37	33	22	20	0 (9)
2-Chlorophenol	JUNE	SEMI	ug/l	92	76	0 (9)	0 (9)	24	25	14	0 (9)	0 (9)
2-Chlorophenol	JULY	SEMI	ug/l	0 (9)	25	0 (9)	0 (9)	21	22	37	0 (9)	5
2-Chlorophenol	AUGUST	SEMI	ug/l	58	43	0 (9)	0 (9)	0 (9)	8	0 (9)	7	0 (9)
2-Chlorophenol	SEPTEMBER	SEMI	ug/l	110	100	0 (9)	0 (9)	22	32	16	0 (9)	5
2-Chlorophenol	OCTOBER	SEMI	ug/l	110	100	0 (9)	0 (9)	14	0 (9)	16	0 (9)	0 (9)
2-Chlorophenol	NOVEMBER	SEMI	ug/l	0 (9)	58	0 (9)	0 (9)	13	0 (9)	0 (9)	0 (9)	0 (9)
2-Chlorophenol	DECEMBER	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	13	14	13	0 (9)	0 (9)
2-Chlorophenol	JANUARY	SEMI	ug/l	53	30	0 (9)	0 (9)	0 (9)	9	7	0 (9)	0 (9)
2-Chlorophenol	FEBRUARY	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	8	9	0 (9)	0 (9)
2-Chlorophenol	MARCH	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	9	0 (9)	8	0 (9)	0 (9)
2-Chlorophenol	APRIL	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Nitroaniline	MAY	SEMI	ug/l	3000	2500	0 (9)	0 (9)	1100	950	150	0 (9)	0 (9)
2-Nitroaniline	JUNE	SEMI	ug/l	580	890	0 (9)	0 (9)	270	410	47	0 (9)	0 (9)
2-Nitroaniline	JULY	SEMI	ug/l	10000	9500	0 (9)	13	1500	1700	65	40	0 (9)
2-Nitroaniline	AUGUST	SEMI	ug/l	7000	7500	0 (9)	0 (9)	2700	2500	220	0 (9)	0 (9)
2-Nitroaniline	SEPTEMBER	SEMI	ug/l	7300	8500	0 (9)	0 (9)	2400	2100	900	55	37
2-Nitroaniline	OCTOBER	SEMI	ug/l	8200	11000	0 (9)	0 (9)	2400	2100	980	0 (9)	10

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PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
2-Nitroaniline	NOVEMBER	SEMI	ug/l	33000	25000	20	8	6400	5500	2800	0 (9)	0 (9)
2-Nitroaniline	DECEMBER	SEMILS(4)	ug/l	7000	8000	0 (9)	20	2000	2000	1000	700	90
2-Nitroaniline	JANUARY	SEMILS(4)	ug/l	4000	5000	0 (9)	0 (9)	1000	800	0 (9)	0 (9)	0 (9)
2-Nitroaniline	FEBRUARY	SEMILS(4)	ug/l	6000	6000	0 (9)	20	3000	2000	2000	0 (9)	200
2-Nitroaniline	MARCH	SEMI	ug/l	4400	3900	0 (9)	8	1500	1400	1100	230	19
2-Nitroaniline	APRIL	SEMI	ug/l	12000	16000	15	4	1500	1700	390	20000	100
2-Nitrophenol	MAY	SEMI	ug/l	3900	4500	0 (9)	0 (9)	1400	1100	470	0 (9)	0 (9)
2-Nitrophenol	JUNE	SEMI	ug/l	9600	8200	0 (9)	0 (9)	250	400	0 (9)	0 (9)	0 (9)
2-Nitrophenol	JULY	SEMI	ug/l	860	1000	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Nitrophenol	AUGUST	SEMI	ug/l	2900	1900	0 (9)	0 (9)	54	0 (9)	0 (9)	0 (9)	0 (9)
2-Nitrophenol	SEPTEMBER	SEMI	ug/l	8000	6000	0 (9)	0 (9)	190	130	40	0 (9)	0 (9)
2-Nitrophenol	OCTOBER	SEMI	ug/l	4900	4000	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Nitrophenol	NOVEMBER	SEMI	ug/l	3800	4200	0 (9)	0 (9)	200	0 (9)	48	0 (9)	0 (9)
2-Nitrophenol	DECEMBER	SEMI	ug/l	880	820	0 (9)	0 (9)	27	0 (9)	0 (9)	0 (9)	0 (9)
2-Nitrophenol	JANUARY	SEMI	ug/l	3700	1100	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Nitrophenol	FEBRUARY	SEMI	ug/l	550	370	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Nitrophenol	MARCH	SEMI	ug/l	180	160	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
2-Nitrophenol	APRIL	SEMI	ug/l	600	970	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
4-Chloroaniline	MAY	SEMI	ug/l	650	2000	0 (9)	0 (9)	1600	2300	2500	2500	360
4-Chloroaniline	JUNE	SEMI	ug/l	75	510	0 (9)	0 (9)	0 (9)	0 (9)	17	0 (9)	0 (9)
4-Chloroaniline	JULY	SEMI	ug/l	160	170	0 (9)	0 (9)	0 (9)	0 (9)	340	190	48
4-Chloroaniline	AUGUST	SEMI	ug/l	0 (9)	440	0 (9)	0 (9)	0 (9)	0 (9)	67	0 (9)	0 (9)
4-Chloroaniline	SEPTEMBER	SEMI	ug/l	380	440	0 (9)	0 (9)	0 (9)	0 (9)	20	0 (9)	0 (9)
4-Chloroaniline	OCTOBER	SEMI	ug/l	130	130	0 (9)	0 (9)	24	35	260	180	22

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APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
4-Chloroaniline	NOVEMBER	SEMI	ug/l	950	440	0 (9)	0 (9)	75	34	0 (9)	560	90
4-Chloroaniline	DECEMBER	SEMILS(4)	ug/l	0 (9)	200	0 (9)	0 (9)	70	0 (9)	70	0 (9)	0 (9)
4-Chloroaniline	JANUARY	SEMILS(4)	ug/l	0 (9)	200	0 (9)	0 (9)	70	60	0 (9)	0 (9)	0 (9)
4-Chloroaniline	FEBRUARY	SEMILS(4)	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	20	0 (9)	0 (9)	0 (9)
4-Chloroaniline	MARCH	SEMI	ug/l	240	770	0 (9)	0 (9)	0 (9)	58	0 (9)	320	0 (9)
4-Chloroaniline	APRIL	SEMI	ug/l	4500	4700	0 (9)	0 (9)	0 (9)	0 (9)	17	0 (9)	54
4-Methyl-2-Pentanone	MAY	VOL	ug/l	890	2600	3	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
4-Methyl-2-Pentanone	JUNE	VOL	ug/l	800	2900	850	89	0 (9)	13	0 (9)	0 (9)	38
4-Methyl-2-Pentanone	JULY	VOL	ug/l	390	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	20	5
4-Methyl-2-Pentanone	AUGUST	VOL	ug/l	1200	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	3
4-Methyl-2-Pentanone	SEPTEMBER	VOL	ug/l	0 (9)	0 (9)	4	13	100	0 (9)	0 (9)	0 (9)	28
4-Methyl-2-Pentanone	OCTOBER	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
4-Methyl-2-Pentanone	NOVEMBER	VOL	ug/l	7500	7600	11	21	0 (9)	0 (9)	0 (9)	0 (9)	10
4-Methyl-2-Pentanone	DECEMBER	VOL	ug/l	0 (9)	0 (9)	150	110	0 (9)	0 (9)	0 (9)	0 (9)	38
4-Methyl-2-Pentanone	JANUARY	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
4-Methyl-2-Pentanone	FEBRUARY	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
4-Methyl-2-Pentanone	MARCH	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
4-Methyl-2-Pentanone	APRIL	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
4-Nitroaniline	MAY	SEMI	ug/l	15000	9300	0 (9)	0 (9)	2800	3300	380	0 (9)	0 (9)
4-Nitroaniline	JUNE	SEMI	ug/l	1300	1800	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
4-Nitroaniline	JULY	SEMI	ug/l	12000	7300	0 (9)	0 (9)	55	120	0 (9)	0 (9)	0 (9)
4-Nitroaniline	AUGUST	SEMI	ug/l	100000	39000	0 (9)	0 (9)	0 (9)	190	0 (9)	0 (9)	0 (9)
4-Nitroaniline	SEPTEMBER	SEMI	ug/l	2600	3200	0 (9)	0 (9)	0 (9)	0 (9)	9	0 (9)	0 (9)
4-Nitroaniline	OCTOBER	SEMI	ug/l	6000	8800	0 (9)	0 (9)	1800	1100	1500	0 (9)	0 (9)
4-Nitroaniline	NOVEMBER	SEMI	ug/l	8200	6200	10	0 (9)	370	0 (9)	27	0 (9)	0 (9)
4-Nitroaniline	DECEMBER	SEMILS(4)	ug/l	3000	3000	0 (9)	0 (9)	200	60	20	0 (9)	0 (9)
4-Nitroaniline	JANUARY	SEMILS(4)	ug/l	3000	4000	0 (9)	0 (9)	1000	600	0 (9)	0 (9)	0 (9)
4-Nitroaniline	FEBRUARY	SEMILS(4)	ug/l	3000	3000	0 (9)	0 (9)	1000	1000	1000	0 (9)	70
4-Nitroaniline	MARCH	SEMI	ug/l	6400	5100	0 (9)	0 (9)	55	0 (9)	130	0 (9)	0 (9)
4-Nitroaniline	APRIL	SEMI	ug/l	4900	6100	0 (9)	0 (9)	0 (9)	37	8	490	0 (9)

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-1

RESULTS OF GULF COAST SAMPLING

PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
	SAMPLE LOCATION NO:			1	2	3	4	5	8	9	10	11
4-Nitrophenol	MAY	SEMI	ug/l	9800	7200	0 (9)	0 (9)	0 (9)	1800	1500	0 (9)	0 (9)
4-Nitrophenol	JUNE	SEMI	ug/l	3400	3900	0 (9)	0 (9)	0 (9)	20	0 (9)	0 (9)	0 (9)
4-Nitrophenol	JULY	SEMI	ug/l	13000	3000	0 (9)	0 (9)	490	610	68	0 (9)	0 (9)
4-Nitrophenol	AUGUST	SEMI	ug/l	6000	6200	0 (9)	0 (9)	700	650	69	0 (9)	0 (9)
4-Nitrophenol	SEPTEMBER	SEMI	ug/l	5500	3800	0 (9)	0 (9)	220	90	0 (9)	0 (9)	0 (9)
4-Nitrophenol	OCTOBER	SEMI	ug/l	4600	8700	0 (9)	0 (9)	270	0 (9)	350	0 (9)	270
4-Nitrophenol	NOVEMBER	SEMI	ug/l	4200	3700	0 (9)	0 (9)	870	0 (9)	100	0 (9)	0 (9)
4-Nitrophenol	DECEMBER	SEMI	ug/l	4900	7600	0 (9)	24	1300	770	0 (9)	430	26
4-Nitrophenol	JANUARY	SEMI	ug/l	4500	2700	0 (9)	25	1100	990	1000	0 (9)	0 (9)
4-Nitrophenol	FEBRUARY	SEMI	ug/l	12000	11000	15	0 (9)	81	0 (9)	0 (9)	0 (9)	0 (9)
4-Nitrophenol	MARCH	SEMI	ug/l	12000	9100	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
4-Nitrophenol	APRIL	SEMI	ug/l	7900	19000	53	0 (9)	480	170	53	0 (9)	0 (9)
Acetone	MAY	VOL	ug/l	5400	4500	370	110	0 (9)	710	0 (9)	0 (9)	120
Acetone	JUNE	VOL	ug/l	0 (9)	19000	1600	380	0 (9)	0 (9)	0 (9)	0 (9)	300
Acetone	JULY	VOL	ug/l	7200	14000	160	130	8	58	0 (9)	0 (9)	180
Acetone	AUGUST	VOL	ug/l	3000	4600	170	390	11	0 (9)	22	0 (9)	260
Acetone	SEPTEMBER	VOL	ug/l	9200	45000	0 (9)	340	0 (9)	560	10	8	190
Acetone	OCTOBER	VOL	ug/l	4400	11000	170	590	230	170	110	39	170
Acetone	NOVEMBER	VOL	ug/l	0 (9)	3400	140	270	11	12	0 (9)	56	130
Acetone	DECEMBER	VOL	ug/l	17000	3500	160	220	50	11	29	41	49
Acetone	JANUARY	VOL	ug/l	12000	1200	840	1100	150	0 (9)	110	0 (9)	610
Acetone	FEBRUARY	VOL	ug/l	1800	0 (9)	530	300	86	99	280	99	0 (9)
Acetone	MARCH	VOL	ug/l	2100	8200	410	530	21	21	220	160	390
Acetone	APRIL	VOL	ug/l	1750	3900	320	305	4	9	7	34	345
Alachlor	MAY	SEMILS	ug/l	0 (9)	0 (9)	100	110	67	58	0 (9)	0 (9)	0 (9)
Alachlor	FEBRUARY	SEMILS	ug/l	0 (9)	0 (9)	0 (9)	10	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Alachlor	APRIL	SEMILS	ug/l	0 (9)	0 (9)	60	40	20	40	20	600	20

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APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
	SAMPLE LOCATION NO:			1	2	3	4	5	8	9	10	11
Aniline	MAY	SEMI(4)	ug/l	20000	14000	0 (9)	16	1700	1500	1800	2000	190
Aniline	JUNE	SEMILS	ug/l	3300	3300	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Aniline	JULY	SEMILS	ug/l	3500	3300	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Aniline	AUGUST	SEMILS	ug/l	2100	2500	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Aniline	SEPTEMBER	SEMILS	ug/l	3200	2400	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Aniline	OCTOBER	SEMILS	ug/l	2200	2600	0 (9)	0 (9)	150	0 (9)	170	0 (9)	0 (9)
Aniline	NOVEMBER	SEMILS	ug/l	3400	4000	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Aniline	DECEMBER	SEMILS	ug/l	5000	6000	0 (9)	0 (9)	900	0 (9)	0 (9)	600	0 (9)
Aniline	JANUARY	SEMILS	ug/l	8000	7000	0 (9)	0 (9)	100	0 (9)	0 (9)	0 (9)	0 (9)
Aniline	FEBRUARY	SEMILS	ug/l	3000	6000	0 (9)	0 (9)	60	0 (9)	0 (9)	0 (9)	0 (9)
Aniline	MARCH	SEMILS	ug/l	4000	5000	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Aniline	APRIL	SEMILS	ug/l	4000	8000	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	200
Arsenic	MAY	METAL	mg/l	0.150	0.012	0.004	0 (9)	0.008	1.030	0.015	1.520	0.008
Arsenic	JUNE	METAL	mg/l	0.146	0.029	0 (9)	0 (9)	0.018	0.200	0.016	1.360	0.010
Arsenic	JULY	METAL	mg/l	0.650	0.011	0.028	0.016	0.019	0.138	0.018	1.040	0.026
Arsenic	AUGUST	METAL	mg/l	0.067	0.014	0.087	0.050	0.043	0.041	0.074	2.700	0.034
Arsenic	SEPTEMBER	METAL	mg/l	0.026	0.020	0.007	0.005	0.014	0.120	0.020	1.530	0.012
Arsenic	OCTOBER	METAL	mg/l	0.059	0.005	0.350	0.300	0.130	0.410	0.111	3	0.260
Arsenic	NOVEMBER	METAL	mg/l	0.615	0 (9)	0 (9)	0 (9)	0.007	0.278	0 (9)	1.700	0.604
Arsenic	DECEMBER	METAL	mg/l	0.116	0.026	0 (9)	0 (9)	0.005	0.063	0.005	0.590	0 (9)
Arsenic	JANUARY	METAL	mg/l	0.016	0.011	0.032	0.030	0.022	0.180	0.032	1.130	0.190
Arsenic	FEBRUARY	METAL	mg/l	0.120	0.036	0.008	0.005	0.014	0.061	0.010	0.589	0.007
Arsenic	MARCH	METAL	mg/l	0.033	0.007	0.005	0.005	0.011	0.300	0.017	2.300	0.014
Arsenic	APRIL	METAL	mg/l	0.023	0.008	0 (9)	0.005	0.010	0.180	0.011	1.700	0 (9)
Atrazine	DECEMBER	SEMILS	ug/l	0 (9)	0 (9)	90	90	0 (9)	0 (9)	20	0 (9)	200
Atrazine	JANUARY	SEMILS	ug/l	0 (9)	0 (9)	300	400	200	100	0 (9)	0 (9)	0 (9)
Atrazine	APRIL	SEMILS	ug/l	0 (9)	0 (9)	40	40	20	40	20	0 (9)	0 (9)

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APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
BOD	MAY	WC	mg/l	(7)	(7)	(7)	(7)	(7)	390	63	1500	160
BOD	JUNE	WC	mg/l	(7)	(7)	(7)	(7)	(7)	90	16	1500	70
BOD	JULY	WC	mg/l	(7)	(7)	(7)	(7)	(7)	120	21	4300	240
BOD	AUGUST	WC	mg/l	(7)	(7)	(7)	(7)	(7)	210	18	1200	88
BOD	SEPTEMBER	WC	mg/l	(7)	(7)	(7)	(7)	(7)	220	38	1600	190
BOD	OCTOBER	WC	mg/l	(7)	(7)	(7)	(7)	(7)	280	28	3400	180
BOD	NOVEMBER	WC	mg/l	(7)	(7)	(7)	(7)	(7)	550	28	3100	2200
BOD	DECEMBER	WC	mg/l	(7)	(7)	(7)	(7)	(7)	520	41	5500	97
BOD	JANUARY	WC	mg/l	(7)	(7)	(7)	(7)	(7)	88	64	2200	1100
BOD	FEBRUARY	WC	mg/l	(7)	(7)	(7)	(7)	(7)	200	29	2600	170
BOD	MARCH	WC	mg/l	(7)	(7)	(7)	(7)	(7)	300	430	3500	110
BOD	APRIL	WC	mg/l	(7)	(7)	(7)	(7)	(7)	490	45	5400	160
Barium	MAY	METAL	mg/l	0.247	0.070	0.552	0.155	0.060	9.02	0.065	13.4	0.112
Barium	JUNE	METAL	mg/l	0.139	0.092	0.259	0.109	0.062	1.92	0.080	18.0	0.151
Barium	JULY	METAL	mg/l	1.090	0.083	0.839	0.147	0.065	1.62	0.096	14.9	0.940
Barium	AUGUST	METAL	mg/l	0.140	0.111	0.413	0.166	0.077	2.87	0.100	22.2	0.327
Barium	SEPTEMBER	METAL	mg/l	0.154	0.070	0.300	0.110	0 (9)	2.19	0.062	35.2	0.264
Barium	OCTOBER	METAL	mg/l	0.150	0.100	0.173	0.117	0.067	1.88	0.075	19.4	0.304
Barium	NOVEMBER	METAL	mg/l	0.575	0.052	0.210	0.087	0.053	5.04	0.064	20.7	13.300
Barium	DECEMBER	METAL	mg/l	0.079	0.057	0.170	0.106	0.057	3.50	0.077	31.0	0.329
Barium	JANUARY	METAL	mg/l	0.062	0.082	0.190	0.087	0 (9)	2.91	0.050	12.5	5.290
Barium	FEBRUARY	METAL	mg/l	0.118	0.065	0.321	0.157	0.051	1.18	0.053	20.1	0.679
Barium	MARCH	METAL	mg/l	0.079	0 (9)	0.290	0.088	0 (9)	3.10	0.062	18.4	0.120
Barium	APRIL	METAL	mg/l	0.300	0.120	0.710	0.520	0.076	5.30	0.090	38.5	0.160
Benzene	MAY	VOL	ug/l	13000	13000	0 (9)	5	950	1500	1000	1600	19
Benzene	JUNE	VOL	ug/l	7200	6400	0 (9)	1	0 (9)	0 (9)	1	36	0 (9)
Benzene	JULY	VOL	ug/l	4600	4900	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	43	2
Benzene	AUGUST	VOL	ug/l	11000	7300	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	12	0 (9)
Benzene	SEPTEMBER	VOL	ug/l	14000	13000	0 (9)	2	380	210	0 (9)	16	2
Benzene	OCTOBER	VOL	ug/l	16000	15000	0 (9)	0 (9)	160	50	0 (9)	0 (9)	6

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APPENDIX A-1

RESULTS OF GULF COAST SAMPLING

PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
Benzene	NOVEMBER	VOL	ug/l	62000	11000	11	9	7	11	8	26	0 (9)
Benzene	DECEMBER	VOL	ug/l	18000	7000	0 (9)	0 (9)	64	43	57	150	2
Benzene	JANUARY	VOL	ug/l	20000	17000	0 (9)	0 (9)	140	310	320	520	0 (9)
Benzene	FEBRUARY	VOL	ug/l	15000	13000	10	2	120	69	51	260	0 (9)
Benzene	MARCH	VOL	ug/l	11000	9100	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	11
Benzene	APRIL	VOL	ug/l	11650	3950	0 (9)	0 (9)	0 (9)	7	2	25	6
Bis(2-Ethylhexyl)Phthalate	MAY	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	10	0 (9)
Bis(2-Ethylhexyl)Phthalate	JUNE	SEMI	ug/l	81	0 (9)	34	46	43	47	36	59	52
Bis(2-Ethylhexyl)Phthalate	JULY	SEMI	ug/l	0 (9)	0 (9)	33	23	17	0 (9)	16	320	22
Bis(2-Ethylhexyl)Phthalate	AUGUST	SEMI	ug/l	30	20	26	24	17	23	19	41	22
Bis(2-Ethylhexyl)Phthalate	SEPTEMBER	SEMI	ug/l	12	22	15	12	11	11	15	380	20
Bis(2-Ethylhexyl)Phthalate	OCTOBER	SEMI	ug/l	0 (9)	7	32	23	11	140	11	560	31
Bis(2-Ethylhexyl)Phthalate	NOVEMBER	SEMI	ug/l	0 (9)	6	18	11	0 (9)	99	8	1100	420
Bis(2-Ethylhexyl)Phthalate	DECEMBER	SEMI	ug/l	0 (9)	0 (9)	24	18	0 (9)	100	10	740	29
Bis(2-Ethylhexyl)Phthalate	JANUARY	SEMI	ug/l	0 (9)	7	12	11	0 (9)	4	8	1900	470
Bis(2-Ethylhexyl)Phthalate	FEBRUARY	SEMI	ug/l	0 (9)	0 (9)	10	120	12	200	0 (9)	140	22
Bis(2-Ethylhexyl)Phthalate	MARCH	SEMI	ug/l	0 (9)	0 (9)	32	25	26	360	10	1000	33
Bis(2-Ethylhexyl)Phthalate	APRIL	SEMI	ug/l	0 (9)	0 (9)	15	9	6	24	6	290	7
Beryllium	MAY	METAL	mg/l	0.007	0 (9)	0 (9)	0 (9)	0 (9)	0.008	0 (9)	0.011	0 (9)
Beryllium	JUNE	METAL	mg/l	0.002	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.005	0 (9)
Beryllium	JULY	METAL	mg/l	0.019	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.012	0 (9)
Beryllium	AUGUST	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.003	0 (9)	0.014	0 (9)
Beryllium	SEPTEMBER	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.364	0.010	0 (9)
Beryllium	OCTOBER	METAL	mg/l	0.002	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.008	0 (9)
Beryllium	NOVEMBER	METAL	mg/l	0.016	0 (9)	0 (9)	0 (9)	0 (9)	0.001	0 (9)	0.009	0.005
Beryllium	DECEMBER	METAL	mg/l	0.001	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Beryllium	JANUARY	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.002	0 (9)	0.016	0 (9)
Beryllium	FEBRUARY	METAL	mg/l	0.002	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.013	0 (9)
Beryllium	MARCH	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.008	0 (9)
Beryllium	APRIL	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.003	0 (9)	0.030	0 (9)

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
Boron	MAY	METAL	mg/l	0.200	0.190	0.408	0.420	0.347	0.524	0.360	0.582	0.391
Boron	JUNE	METAL	mg/l	0.282	0.336	0.416	0.490	0.346	0.441	0.369	1.730	0.392
Boron	JULY	METAL	mg/l	0.463	0.432	0.445	0.433	0.403	0.458	0.468	0.932	0.473
Boron	AUGUST	METAL	mg/l	0.430	0.357	0.476	0.553	0.367	0.414	0.444	0.565	0.499
Boron	SEPTEMBER	METAL	mg/l	0.409	0.364	0.489	0.494	0.399	0.434	0.004	1.230	0.450
Boron	OCTOBER	METAL	mg/l	0.348	0.384	3.050	3.010	2.050	2.190	3.010	3.610	2.590
Boron	NOVEMBER	METAL	mg/l	0.402	0.364	0.504	0.466	0.417	0.552	0.361	0.794	1.020
Boron	DECEMBER	METAL	mg/l	0.307	0.236	0.336	0.378	0.312	0.380	0.286	0.836	0.339
Boron	JANUARY	METAL	mg/l	0.330	0.423	0.431	0.419	0.347	0.466	0.429	0.810	0.628
Boron	FEBRUARY	METAL	mg/l	0.359	0.379	0.413	0.384	0.362	0.535	0.345	1.630	0.340
Boron	MARCH	METAL	mg/l	0.600	0.550	0.470	0.440	0.410	0.500	0.450	0.930	0.410
Boron	APRIL	METAL	mg/l	0.210	0.130	0.310	0.290	0.230	0.320	0.280	1.200	0.280
Butoxyethoxyethanol	MAY	SEMILS	ug/l	0 (9)	0 (9)	850	0 (9)	95	320	0 (9)	0 (9)	0 (9)
Butylbenzylphthalate	MAY	SEMI	ug/l	230	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Butylbenzylphthalate	JUNE	SEMI	ug/l	0 (9)	0 (9)	13	17	0 (9)	0 (9)	0 (9)	0 (9)	19
Butylbenzylphthalate	JULY	SEMI	ug/l	0 (9)	0 (9)	14	7	0 (9)	0 (9)	0 (9)	0 (9)	10
Butylbenzylphthalate	AUGUST	SEMI	ug/l	0 (9)	0 (9)	11	15	0 (9)	0 (9)	0 (9)	0 (9)	6
Butylbenzylphthalate	SEPTEMBER	SEMI	ug/l	0 (9)	17	35	23	0 (9)	0 (9)	0 (9)	0 (9)	18
Butylbenzylphthalate	OCTOBER	SEMI	ug/l	350	19	35	21	0 (9)	0 (9)	0 (9)	0 (9)	78
Butylbenzylphthalate	NOVEMBER	SEMI	ug/l	1100	0 (9)	47	24	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Butylbenzylphthalate	DECEMBER	SEMI	ug/l	27	0 (9)	43	24	0 (9)	0 (9)	0 (9)	0 (9)	57
Butylbenzylphthalate	JANUARY	SEMI	ug/l	0 (9)	0 (9)	53	44	0 (9)	0.900	0 (9)	0 (9)	0 (9)
Butylbenzylphthalate	FEBRUARY	SEMI	ug/l	310	23	25	3	0 (9)	0 (9)	0 (9)	0 (9)	31
Butylbenzylphthalate	MARCH	SEMI	ug/l	0 (9)	0 (9)	24	18	0 (9)	0 (9)	1	0 (9)	15.5
Butylbenzylphthalate	APRIL	SEMI	ug/l	0 (9)	0 (9)	15	9	0 (9)	0 (9)	0 (9)	0 (9)	7

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APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
			SAMPLE LOCATION NO:	1	2	3	4	5	8	9	10	11
COD	MAY	WC	mg/l	1800	400	225	60	300	1600	400	12000	400
COD	JUNE	WC	mg/l	580	400	300	200	150	3300	200	18000	340
COD	JULY	WC	mg/l	5000	440	350	160	90	1700	170	26000	650
COD	AUGUST	WC	mg/l	800	1300	200	150	16	2800	280	0 (9)	250
COD	SEPTEMBER	WC	mg/l	610	340	240	110	50	3000	90	26000	320
COD	OCTOBER	WC	mg/l	740	440	290	210	100	2000	160	22000	400
COD	NOVEMBER	WC	mg/l	3000	430	210	160	110	2200	100	19000	7900
COD	DECEMBER	WC	mg/l	620	520	220	160	120	2600	170	24000	370
COD	JANUARY	WC	mg/l	700	520	270	200	190	520	240	16200	4000
COD	FEBRUARY	WC	mg/l	510	510	150	150	75	85	180	29000	160
COD	MARCH	WC	mg/l	2800	800	340	190	130	3900	120	30000	350
COD	APRIL	WC	mg/l	1000	540	360	110	120	3700	310	47000	3400
Cadmium	MAY	METAL	mg/l	(7)	(7)	0 (9)	0 (9)	(7)	1.31	0 (9)	2.03	0 (9)
Cadmium	JUNE	METAL	mg/l	(7)	(7)	0.011	0.038	(7)	0.552	0.008	6.89	0.005
Cadmium	JULY	METAL	mg/l	(7)	(7)	0.005	0.004	(7)	0.454	0.010	6.92	0.045
Cadmium	AUGUST	METAL	mg/l	(7)	(7)	0.019	0.012	(7)	1.24	0.008	10.2	0.014
Cadmium	SEPTEMBER	METAL	mg/l	(7)	(7)	0 (9)	0 (9)	(7)	0.833	0 (9)	12.7	0.016
Cadmium	OCTOBER	METAL	mg/l	(7)	(7)	0.006	0.007	(7)	0.894	0.014	11.4	0.019
Cadmium	NOVEMBER	METAL	mg/l	(7)	(7)	0.007	0 (9)	(7)	0.895	0.006	4.74	1.750
Cadmium	DECEMBER	METAL	mg/l	(7)	(7)	0.070	0.063	(7)	0.381	0 (9)	3.29	0.007
Cadmium	JANUARY	METAL	mg/l	(7)	(7)	0.006	0.005	(7)	0.638	0.006	3.71	0.367
Cadmium	FEBRUARY	METAL	mg/l	(7)	(7)	0.004	0 (9)	(7)	0.185	0.005	2.98	0.018
Cadmium	MARCH	METAL	mg/l	(7)	(7)	0 (9)	0.005	(7)	0.180	0.007	1.50	0 (9)
Cadmium	APRIL	METAL	mg/l	(7)	(7)	0 (9)	0 (9)	(7)	0.140	0.007	1.50	0 (9)
Chlorides, total	MAY	WC	mg/l	2500	1700	690	590	1500	1400	1400	1300	590
Chlorides, total	JUNE	WC	mg/l	1800	1800	270	290	1000	1000	1200	1100	530
Chlorides, total	JULY	WC	mg/l	1300	1400	540	500	840	980	1100	980	780
Chlorides, total	AUGUST	WC	mg/l	1800	1900	640	700	1500	1300	1900	740	840
Chlorides, total	SEPTEMBER	WC	mg/l	1400	1500	300	250	900	1000	820	800	360
Chlorides, total	OCTOBER	WC	mg/l	1400	1500	160	180	890	850	820	850	410

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APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
	SAMPLE LOCATION NO:			1	2	3	4	5	8	9	10	11
Chlorides, total	NOVEMBER	WC	mg/l	1100	1300	28	80	520	450	690	1100	350
Chlorides, total	DECEMBER	WC	mg/l	1700	2000	69	96	1200	1100	1400	1300	200
Chlorides, total	JANUARY	WC	mg/l	3600	2800	240	230	1200	1100	1700	1400	420
Chlorides, total	FEBRUARY	WC	mg/l	3400	3600	600	600	1600	930	900	1100	400
Chlorides, total	MARCH	WC	mg/l	3030	2950	293	250	1190	1220	1230	1410	375
Chlorides, total	APRIL	WC	mg/l	2700	3600	570	520	1300	1320	1300	1020	524
Chlorine, tot. res.	MAY	WC	mg/l	0 (9)	(5)	0 (9)	0 (9)	0.600	(5)	(5)	0 (9)	0 (9)
Chlorine, tot. res.	JUNE	WC	mg/l	0 (9)	(5)	0 (9)	0 (9)	0.700	0 (9)	0 (9)	0 (9)	0 (9)
Chlorine, tot. res.	JULY	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0.600	(5)	0 (9)	0 (9)	0 (9)
Chlorine, tot. res.	AUGUST	WC	mg/l	(5)	(5)	(5)	(5)	0.100	0 (9)	(5)	(5)	(5)
Chlorine, tot. res.	SEPTEMBER	WC	mg/l	(5)	0 (9)	0 (9)	(5)	0.200	0 (9)	0 (9)	0 (9)	0 (9)
Chlorine, tot. res.	OCTOBER	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	(5)	0 (9)	0 (9)	0 (9)
Chlorine, tot. res.	NOVEMBER	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0.900	0 (9)	0 (9)	0 (9)	0 (9)
Chlorine, tot. res.	DECEMBER	WC	mg/l	(5)	(5)	0 (9)	0 (9)	0.300	0 (9)	(5)	0 (9)	(5)
Chlorine, tot. res.	JANUARY	WC	mg/l	(5)	(5)	0 (9)	0 (9)	0.200	0 (9)	0 (9)	0 (9)	0 (9)
Chlorine, tot. res.	FEBRUARY	WC	mg/l	0 (9)	0 (9)	0 (9)	(5)	0.400	(5)	0 (9)	0 (9)	0 (9)
Chlorine, tot. res.	MARCH	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0.300	0 (9)	0 (9)	0 (9)	0 (9)
Chlorine, tot. res.	APRIL	WC	mg/l	0 (9)	(5)	0 (9)	0 (9)	0.400	0 (9)	0 (9)	0 (9)	0 (9)
Chloroaniline	MAY	SEMILS	ug/l	0 (9)	460	0 (9)	0 (9)	380	430	570	720	98
Chloroaniline	JUNE	SEMILS	ug/l	0 (9)	190	0 (9)	36	240	500	780	1700	190
Chloroaniline	JULY	SEMILS	ug/l	160	170	0 (9)	27	270	410	720	2100	150
Chloroaniline	AUGUST	VOLLS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	29	0 (9)
Chloroaniline	AUGUST	SEMILS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	170	140	620	650	62
Chloroaniline	SEPTEMBER	SEMILS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	100	180	640	700	71
Chloroaniline	OCTOBER	VOLLS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	53	89	0 (9)
Chloroaniline	OCTOBER	SEMILS	ug/l	0 (9)	0 (9)	0 (9)	46	160	290	390	610	88
Chloroaniline	NOVEMBER	SEMILS	ug/l	0 (9)	220	0 (9)	0 (9)	190	400	380	0 (9)	0 (9)
Chloroaniline	DECEMBER	SEMILS	ug/l	200	400	0 (9)	0 (9)	300	400	500	900	80
Chloroaniline	JANUARY	VOLLS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	30	0 (9)	0 (9)	0 (9)
Chloroaniline	JANUARY	SEMILS	ug/l	0 (9)	300	0 (9)	0 (9)	300	200	0 (9)	0 (9)	0 (9)

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
Chloroaniline	FEBRUARY	VOLLS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	20	0 (9)
Chloroaniline	FEBRUARY	SEMILS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	200	400	500	200	100
Chloroaniline	MARCH	VOLLS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	200	0 (9)
Chloroaniline	MARCH	SEMILS	ug/l	0 (9)	300	0 (9)	0 (9)	100	500	400	1000	70
Chloroaniline	APRIL	SEMILS	ug/l	0 (9)	700	0 (9)	0 (9)	40	30	200	1000	50
Chlorobenzene	MAY	VOL	ug/l	3900	4700	9	20	720	880	550	1100	28
Chlorobenzene	MAY	SEMILS(3)	ug/l	450	1000	0 (9)	0 (9)	100	110	77	150	550
Chlorobenzene	JUNE	VOL	ug/l	10000	9300	0 (9)	4	140	200	170	320	38
Chlorobenzene	JUNE	SEMILS(3)	ug/l	1600	3300	0 (9)	0 (9)	21	37	23	0 (9)	0 (9)
Chlorobenzene	JULY	VOL	ug/l	5400	12000	0 (9)	6	170	340	320	490	55
Chlorobenzene	JULY	SEMILS(3)	ug/l	2200	1300	0 (9)	0 (9)	39	19	10	280	0 (9)
Chlorobenzene	AUGUST	VOL	ug/l	2600	3100	0 (9)	0 (9)	10	69	11	110	9
Chlorobenzene	AUGUST	SEMILS(3)	ug/l	510	410	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chlorobenzene	SEPTEMBER	VOL	ug/l	6000	9300	0 (9)	4	760	900	180	780	16
Chlorobenzene	SEPTEMBER	SEMILS(3)	ug/l	1400	1100	0 (9)	0 (9)	87	81	0 (9)	0 (9)	8
Chlorobenzene	OCTOBER	VOL	ug/l	3100	6300	0 (9)	0 (9)	180	220	130	190	19
Chlorobenzene	OCTOBER	SEMILS(3)	ug/l	490	570	0 (9)	0 (9)	0 (9)	0 (9)	39	0 (9)	0 (9)
Chlorobenzene	NOVEMBER	VOL	ug/l	8300	9200	0 (9)	0 (9)	87	140	46	120	0 (9)
Chlorobenzene	NOVEMBER	SEMILS(3)	ug/l	0 (9)	550	0 (9)	0 (9)	51	0 (9)	0 (9)	0 (9)	0 (9)
Chlorobenzene	DECEMBER	VOL	ug/l	7700	4000	16	8	190	230	280	370	11
Chlorobenzene	DECEMBER	SEMILS(3)	ug/l	800	700	0 (9)	0 (9)	50	0 (9)	40	0 (9)	0 (9)
Chlorobenzene	JANUARY	VOL	ug/l	3700	4600	3	5	210	270	260	440	13
Chlorobenzene	JANUARY	SEMILS(3)	ug/l	1000	700	0 (9)	0 (9)	0 (9)	20	0 (9)	0 (9)	0 (9)
Chlorobenzene	FEBRUARY	VOL	ug/l	2200	3300	3	5	200	270	130	290	0 (9)
Chlorobenzene	FEBRUARY	SEMILS(3)	ug/l	0 (9)	700	0 (9)	0 (9)	70	0 (9)	60	0 (9)	0 (9)
Chlorobenzene	MARCH	VOL	ug/l	2700	1800	6	5	34	13	19	67	21
Chlorobenzene	MARCH	SEMILS(3)	ug/l	0 (9)	400	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chlorobenzene	APRIL	VOL	ug/l	5450	2500	3	2	2	8	15	7	8
Chlorobenzene	APRIL	SEMILS(3)	ug/l	0 (9)	1000	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)

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APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
Chloroform	MAY	VOL	ug/l	0 (9)	0 (9)	13	13	0 (9)	0 (9)	0 (9)	0 (9)	15
Chloroform	JUNE	VOL	ug/l	0 (9)	0 (9)	10	8	4	0 (9)	3	0 (9)	0 (9)
Chloroform	JULY	VOL	ug/l	0 (9)	0 (9)	6	6	4	0 (9)	0 (9)	2	2
Chloroform	AUGUST	VOL	ug/l	0 (9)	0 (9)	4	4	5	8	4	3	4
Chloroform	SEPTEMBER	VOL	ug/l	0 (9)	0 (9)	3	4	0 (9)	0 (9)	3	3	2
Chloroform	OCTOBER	VOL	ug/l	0 (9)	0 (9)	11	12	0 (9)	0 (9)	6	6	5
Chloroform	NOVEMBER	VOL	ug/l	0 (9)	0 (9)	12	11	11	9	5	0 (9)	11
Chloroform	DECEMBER	VOL	ug/l	0 (9)	0 (9)	12	11	8	9	8	9	10
Chloroform	JANUARY	VOL	ug/l	0 (9)	0 (9)	18	16	11	12	13	0 (9)	17
Chloroform	FEBRUARY	VOL	ug/l	0 (9)	59	6	22	13	14	7	13	0 (9)
Chloroform	MARCH	VOL	ug/l	200	0 (9)	21	26	18	15	10	14	20
Chloroform	APRIL	VOL	ug/l	90	0 (9)	4	4	2	4	4	3	7
Chloronitrobenzene	MAY	SEMILS	ug/l	4600	2800	0 (9)	0 (9)	560	810	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	MAY	SEMILS	ug/l	2100	2500	0 (9)	0 (9)	400	370	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	JUNE	SEMILS	ug/l	280	150	0 (9)	0 (9)	370	640	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	JUNE	SEMILS	ug/l	3900	3400	0 (9)	0 (9)	0 (9)	0 (9)	25	0 (9)	0 (9)
Chloronitrobenzene	JUNE	SEMILS	ug/l	3100	3000	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	JULY	SEMILS	ug/l	350	340	0 (9)	0 (9)	67	660	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	JULY	SEMILS	ug/l	5600	5600	0 (9)	0 (9)	810	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	JULY	SEMILS	ug/l	6000	6100	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	AUGUST	SEMILS	ug/l	2700	2700	0 (9)	0 (9)	580	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	AUGUST	SEMILS	ug/l	1000	1200	0 (9)	0 (9)	0 (9)	260	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	SEPTEMBER	SEMILS	ug/l	5200	4400	0 (9)	0 (9)	620	610	140	0 (9)	0 (9)
Chloronitrobenzene	OCTOBER	SEMILS	ug/l	560	520	0 (9)	0 (9)	140	0 (9)	38	0 (9)	0 (9)
Chloronitrobenzene	OCTOBER	SEMILS	ug/l	980	930	0 (9)	0 (9)	0 (9)	100	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	OCTOBER	SEMILS	ug/l	0 (9)	120	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	NOVEMBER	SEMILS	ug/l	3900	2500	0 (9)	0 (9)	240	180	67	0 (9)	0 (9)
Chloronitrobenzene	NOVEMBER	SEMILS	ug/l	1600	1200	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	NOVEMBER	SEMILS	ug/l	0 (9)	250	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	DECEMBER	VOLLS	ug/l	6600	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)

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APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
	SAMPLE LOCATION NO:			1	2	3	4	5	8	9	10	11
Chloronitrobenzene	DECEMBER	SEMILS	ug/l	6000	5000	0 (9)	0 (9)	400	200	300	0 (9)	0 (9)
Chloronitrobenzene	DECEMBER	SEMILS	ug/l	3000	3000	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	DECEMBER	SEMILS	ug/l	500	500	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	JANUARY	SEMILS	ug/l	2000	2000	0 (9)	0 (9)	200	100	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	JANUARY	SEMILS	ug/l	2000	2000	0 (9)	0 (9)	40	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	JANUARY	SEMILS	ug/l	300	300	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	FEBRUARY	VOLLS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	30	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	FEBRUARY	SEMILS	ug/l	3000	3000	0 (9)	0 (9)	600	300	300	0 (9)	0 (9)
Chloronitrobenzene	FEBRUARY	SEMILS	ug/l	2000	2000	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	FEBRUARY	SEMILS	ug/l	0 (9)	300	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	MARCH	SEMILS	ug/l	4000	3000	0 (9)	0 (9)	300	300	40	0 (9)	0 (9)
Chloronitrobenzene	MARCH	SEMILS	ug/l	2000	2000	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	MARCH	SEMILS	ug/l	0 (9)	300	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Chloronitrobenzene	APRIL	SEMILS	ug/l	4000	4000	0 (9)	0 (9)	200	400	30	4000	0 (9)
Chloronitrobenzene	APRIL	SEMILS	ug/l	0 (9)	2000	0 (9)	0 (9)	20	90	0 (9)	1000	0 (9)
Chloronitrobenzene	APRIL	SEMILS	ug/l	0 (9)	400	0 (9)	0 (9)	9	30	0 (9)	500	0 (9)
Chromium, Total	MAY	METAL	mg/l	(7)	(7)	0.030	0 (9)	(7)	3.19	0 (9)	11.0	0.020
Chromium, Total	JUNE	METAL	mg/l	(7)	(7)	0.089	0.060	(7)	1.36	0.025	17.3	0.110
Chromium, Total	JULY	METAL	mg/l	(7)	(7)	0.093	0.030	(7)	0.756	0 (9)	12.0	0.175
Chromium, Total	AUGUST	METAL	mg/l	(7)	(7)	0.237	0.139	(7)	1.34	0 (9)	10.9	0.108
Chromium, Total	SEPTEMBER	METAL	mg/l	(7)	(7)	1.400	0.777	(7)	1.30	0.020	22.0	0.318
Chromium, Total	OCTOBER	METAL	mg/l	(7)	(7)	0.052	0.030	(7)	1.32	0.021	15.2	0.074
Chromium, Total	NOVEMBER	METAL	mg/l	(7)	(7)	0.053	0.028	(7)	1.52	0 (9)	8.23	6.250
Chromium, Total	DECEMBER	METAL	mg/l	(7)	(7)	0.070	0.063	(7)	2.79	0.048	25.3	0.142
Chromium, Total	JANUARY	METAL	mg/l	(7)	(7)	0.472	0.288	(7)	1.85	0 (9)	10.6	4.200
Chromium, Total	FEBRUARY	METAL	mg/l	(7)	(7)	0.322	0.081	(7)	0.951	0 (9)	15.3	0.183
Chromium, Total	MARCH	METAL	mg/l	(7)	(7)	0 (9)	0.081	0.025	2.60	0 (9)	20.8	0.053
Chromium, Total	APRIL	METAL	mg/l	(7)	(7)	0.380	0.022	(7)	1.40	0 (9)	15.7	0 (9)

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APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
Chromium, Trivalent	MAY	METAL	mg/l	1.180	0 (9)	0.030	0 (9)	0 (9)	3.190	0 (9)	4.830	0 (9)
Chromium, Trivalent	JUNE	METAL	mg/l	0.374	0 (9)	0.089	0.060	0 (9)	1.130	0.025	17.300	0.110
Chromium, Trivalent	JULY	METAL	mg/l	3.880	0.031	0.093	0.030	0 (9)	0.756	0 (9)	12	0.175
Chromium, Trivalent	AUGUST	METAL	mg/l	0.260	0 (9)	0.240	0.140	0 (9)	1.340	0 (9)	10.900	0.108
Chromium, Trivalent	SEPTEMBER	METAL	mg/l	0.231	0.054	1.400	0.777	0.026	1.300	0.020	22	0.318
Chromium, Trivalent	OCTOBER	METAL	mg/l	0.213	0 (9)	0.052	0.030	0 (9)	1.320	0.021	15.200	0.074
Chromium, Trivalent	NOVEMBER	METAL	mg/l	1.790	0 (9)	0.053	0.028	0 (9)	1.520	0 (9)	8.230	6.250
Chromium, Trivalent	DECEMBER	METAL	mg/l	0.175	0 (9)	0.070	0.063	0.024	2.790	0.048	25.100	0.142
Chromium, Trivalent	JANUARY	METAL	mg/l	0.226	0 (9)	0.072	0.288	0.026	1.850	0 (9)	10.600	4.200
Chromium, Trivalent	FEBRUARY	METAL	mg/l	0.687	0.020	0.322	0.081	0 (9)	0.951	0 (9)	15.300	0.183
Chromium, Trivalent	MARCH	METAL	mg/l	0.280	0 (9)	0 (9)	0 (9)	0.020	2.600	0 (9)	20.800	0 (9)
Chromium, Trivalent	APRIL	METAL	mg/l	0.220	0 (9)	0.380	0.022	0 (9)	1.400	0 (9)	15.700	0 (9)
Coliforms, fecal	MAY	WC	/100 ml	0 (9)	0 (9)	(8)	(8)	(7)	(5)	(8)	(8)	(8)
Coliforms, fecal	JUNE	WC	/100 ml	0 (9)	0 (9)	289000	158000	(7)	162000	94000	370000	33500
Coliforms, fecal	JULY	WC	/100 ml	10	0 (9)	238000	59000	(7)	241000	59000	1250000	86000
Coliforms, fecal	AUGUST	WC	/100 ml	0 (9)	0 (9)	450000	300000	(7)	270000	110000	600000	480000
Coliforms, fecal	SEPTEMBER	WC	/100 ml	0 (9)	0 (9)	400000	200000	(7)	100000	0 (9)	2800000	900000
Coliforms, fecal	OCTOBER	WC	/100 ml	0 (9)	0 (9)	108000	350000	(7)	230000	40000	20000	430000
Coliforms, fecal	NOVEMBER	WC	/100 ml	0 (9)	0 (9)	390000	1650000	(7)	360000	470000	550000	1720000
Coliforms, fecal	DECEMBER	WC	/100 ml	0 (9)	0 (9)	290000	1270000	(7)	1080000	690000	1150000	1690000
Coliforms, fecal	JANUARY	WC	/100 ml	0 (9)	0 (9)	100000	720000	(7)	280000	560000	1660000	1540000
Coliforms, fecal	FEBRUARY	WC	/100 ml	0 (9)	0 (9)	570000	1410000	(7)	990000	740000	103000	1750000
Coliforms, fecal	MARCH	WC	/100 ml	0 (9)	0 (9)	340000	1160000	(7)	980000	820000	1150000	1650000
Coliforms, fecal	APRIL	WC	/100 ml	0 (9)	0 (9)	420000	1620000	(7)	1090000	980000	480000	1210000
Copper	MAY	METAL	mg/l	(7)	(7)	0.035	0.029	(7)	7.190	0.030	11.0	0.036
Copper	JUNE	METAL	mg/l	(7)	(7)	0.036	0.171	(7)	1.720	0.034	20.3	0.038
Copper	JULY	METAL	mg/l	(7)	(7)	0.080	0.060	(7)	1.680	0.057	29.0	0.244
Copper	AUGUST	METAL	mg/l	(7)	(7)	0.045	0.030	(7)	5.920	0.053	45.3	0.085
Copper	SEPTEMBER	METAL	mg/l	(7)	(7)	0.054	0.021	(7)	5.560	0.058	88.8	0.108
Copper	OCTOBER	METAL	mg/l	(7)	(7)	0.038	0.023	(7)	3.070	0.036	36.2	0.094

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RESULTS OF GULF COAST SAMPLING

PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
			SAMPLE LOCATION NO:	1	2	3	4	5	8	9	10	11
Copper	NOVEMBER	METAL	mg/l	(7)	(7)	0.078	0.048	(7)	4.82	0.050	27.5	10.800
Copper	DECEMBER	METAL	mg/l	(7)	(7)	0.039	0.031	(7)	2.93	0.046	25.1	0.108
Copper	JANUARY	METAL	mg/l	(7)	(7)	0.060	0.058	(7)	5.70	0.065	35.9	3.180
Copper	FEBRUARY	METAL	mg/l	(7)	(7)	0.060	0.038	(7)	1.71	0.025	31.0	0.162
Copper	MARCH	METAL	mg/l	(7)	(7)	0.043	0.045	(7)	4.70	0.042	41.2	0.032
Copper	APRIL	METAL	mg/l	(7)	(7)	0.068	0 (9)	(7)	3.90	0.050	46.8	0.037
Cyanides, total	MAY	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0.030	0 (9)	0 (9)	0.020	0 (9)
Cyanides, total	JUNE	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.200	0 (9)
Cyanides, total	JULY	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.020	0 (9)
Cyanides, total	AUGUST	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Cyanides, total	SEPTEMBER	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Cyanides, total	OCTOBER	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0.020	0 (9)	0 (9)	0.090	0 (9)
Cyanides, total	NOVEMBER	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0.020	0 (9)	0 (9)	0.070	0.050
Cyanides, total	DECEMBER	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0.020	0 (9)	0 (9)	0.050	0 (9)
Cyanides, total	JANUARY	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0.020	0 (9)	0 (9)	0.080	0.040
Cyanides, total	FEBRUARY	WC	mg/l	0.020	0 (9)	0 (9)	0 (9)	0.030	0.020	0 (9)	0.020	0 (9)
Cyanides, total	MARCH	WC	mg/l	0 (9)	0.013	0 (9)	0 (9)	0.030	0 (9)	0 (9)	0.190	0 (9)
Cyanides, total	APRIL	WC	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0.024	0.033	0 (9)	0.130	0 (9)
Di-n-butylphthalate	MAY	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Di-n-butylphthalate	JUNE	SEMI	ug/l	0 (9)	0 (9)	4	3	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Di-n-butylphthalate	JULY	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	350	2
Di-n-butylphthalate	AUGUST	SEMI	ug/l	0 (9)	0 (9)	2	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	2
Di-n-butylphthalate	SEPTEMBER	SEMI	ug/l	0 (9)	0 (9)	2	2	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Di-n-butylphthalate	OCTOBER	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Di-n-butylphthalate	NOVEMBER	SEMI	ug/l	0 (9)	0 (9)	0 (9)	2	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Di-n-butylphthalate	DECEMBER	SEMI	ug/l	0 (9)	0 (9)	3	3	0 (9)	0 (9)	0 (9)	0 (9)	2
Di-n-butylphthalate	JANUARY	SEMI	ug/l	0 (9)	0 (9)	5	0 (9)	0 (9)	0 (9)	0 (9)	1200	0 (9)
Di-n-butylphthalate	FEBRUARY	SEMI	ug/l	0 (9)	0 (9)	5	2	0 (9)	0 (9)	0 (9)	0 (9)	3
Di-n-butylphthalate	MARCH	SEMI	ug/l	0 (9)	0 (9)	3	4	1	10	0 (9)	0 (9)	3
Di-n-butylphthalate	APRIL	SEMI	ug/l	0 (9)	0 (9)	4	4	0 (9)	0 (9)	0 (9)	430	2

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RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
Dichlorobenzene	MAY	VOLLS	ug/l	850	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Dichlorobenzene	MAY	VOLLS	ug/l	570	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Dichlorobenzene	JUNE	VOLLS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	290	0 (9)
Dichlorobenzene	JULY	VOLLS	ug/l	2200	2000	27	19	340	400	21	240	75
Dichlorobenzene	JULY	VOLLS	ug/l	2000	2300	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	250	0 (9)
Dichlorobenzene	AUGUST	VOLLS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	19	0 (9)	0 (9)	0 (9)
Dichlorobenzene	AUGUST	VOLLS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	160	340	190	420	36
Dichlorobenzene	OCTOBER	VOLLS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	340	72	130	160	34
Dichlorobenzene	OCTOBER	VOLLS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	180	140	230	280	0 (9)
Dichlorobenzene	DECEMBER	VOLLS	ug/l	2800	2000	0 (9)	13	180	180	140	0 (9)	130
Dichlorobenzene	DECEMBER	VOLLS	ug/l	0 (9)	2000	19	14	320	320	250	0 (9)	0 (9)
Dichlorobenzene	JANUARY	VOLLS	ug/l	0 (9)	600	20	0 (9)	0 (9)	100	200	0 (9)	0 (9)
Dichlorobenzene	JANUARY	VOLLS	ug/l	0 (9)	600	0 (9)	0 (9)	0 (9)	100	100	0 (9)	0 (9)
Dichlorobenzene	FEBRUARY	VOLLS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	100	0 (9)	0 (9)	100	10
Dichlorobenzene	FEBRUARY	VOLLS	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	80	0 (9)	0 (9)	80	0 (9)
Dichlorobenzene	MARCH	VOLLS	ug/l	900	6000	0 (9)	0 (9)	300	100	200	300	200
Dichlorobenzene	APRIL	VOLLS	ug/l	0 (9)	0 (9)	20	30	40	0 (9)	20	0 (9)	60
Ethoxybenzenamine	MAY	SEMILS	ug/l	1000	0 (9)	0 (9)	0 (9)	110	91	54	65	0 (9)
Ethylbenzene	MAY	VOL	ug/l	710	1100	14	18	73	100	87	230	25
Ethylbenzene	MAY	SEMILS(3)	ug/l	210	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Ethylbenzene	JUNE	VOL	ug/l	1400	1800	25	10	3	12	2	0 (9)	0 (9)
Ethylbenzene	JULY	VOL	ug/l	2000	2000	21	16	6	16	0 (9)	15	22
Ethylbenzene	AUGUST	VOL	ug/l	6400	370	8	8	0 (9)	0 (9)	0 (9)	0 (9)	8
Ethylbenzene	AUGUST	SEMILS(3)	ug/l	140	100	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
Ethylbenzene	SEPTEMBER	VOL	ug/l	0 (9)	0 (9)	12	25	0 (9)	0 (9)	0 (9)	7	66
Ethylbenzene	OCTOBER	VOL	ug/l	220	500	41	18	120	160	2	95	7
Ethylbenzene	NOVEMBER	VOL	ug/l	740	1500	16	25	9	15	6	0 (9)	12
Ethylbenzene	DECEMBER	VOL	ug/l	4900	810	120	88	44	74	62	63	65
Ethylbenzene	JANUARY	VOL	ug/l	540	640	10	7	0 (9)	10	9	0 (9)	10
Ethylbenzene	FEBRUARY	VOL	ug/l	1100	1900	8	18	9	20	12	45	0 (9)
Ethylbenzene	MARCH	VOL	ug/l	680	450	54	90	3	1	2	23	53
Ethylbenzene	APRIL	VOL	ug/l	335	265	14	19	3	4	4	2	21
Fluoride	MAY	WC	mg/l	2.0	1.6	2.6	4.7	4.7	3.4	4.1	9.1	4.1
Fluoride	JUNE	WC	mg/l	1.8	1.5	3.9	3.9	3.4	3.9	3.1	13.	3.5
Fluoride	JULY	WC	mg/l	1.0	1.2	3.9	4.4	3.0	4.4	3.6	30.	5.1
Fluoride	AUGUST	WC	mg/l	1.1	1.1	3.4	3.9	4.0	6.3	2.4	18.	4.9
Fluoride	SEPTEMBER	WC	mg/l	1.1	1.1	3.7	3.9	1.9	5.4	3.0	11.	3.0
Fluoride	OCTOBER	WC	mg/l	1.6	1.5	32.	27.	14.	22.	15.	53.	40.
Fluoride	NOVEMBER	WC	mg/l	2.3	1.8	1.8	1.8	1.8	4.8	2.1	40.0	9.6
Fluoride	DECEMBER	WC	mg/l	1.1	1.5	1.2	1.3	1.4	2.8	1.7	9.60	1.4
Fluoride	JANUARY	WC	mg/l	1.6	1.5	4.7	4.5	3.4	3.2	3.8	21.0	11.
Fluoride	FEBRUARY	WC	mg/l	0.6	1.8	10.	10.	5.2	4.5	4.2	33.0	3.5
Fluoride	MARCH	WC	mg/l	1.3	1.3	4.1	3.6	3.0	8.1	2.5	88.5	6.0
Fluoride	APRIL	WC	mg/l	0.97	0.82	3.9	3.9	2.5	9.0	3.8	64.7	3.2
Iron	MAY	METAL	mg/l	(7)	(7)	(7)	(7)	(7)	847	2.13	1290	4.59
Iron	JUNE	METAL	mg/l	(7)	(7)	(7)	(7)	(7)	80.5	1.11	859	4.49
Iron	JULY	METAL	mg/l	(7)	(7)	(7)	(7)	(7)	42.5	1.53	871	2.15
Iron	AUGUST	METAL	mg/l	(7)	(7)	(7)	(7)	(7)	83.0	0.960	680	5.88
Iron	SEPTEMBER	METAL	mg/l	(7)	(7)	(7)	(7)	(7)	61.8	1.26	999	5.26
Iron	OCTOBER	METAL	mg/l	(7)	(7)	(7)	(7)	(7)	33.4	1.42	366	8.91

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-1

RESULTS OF GULF COAST SAMPLING

PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
			SAMPLE LOCATION NO:	1	2	3	4	5	8	9	10	11
Iron	NOVEMBER	METAL	mg/l	(7)	(7)	(7)	(7)	(7)	84.8	1.05	490	744.
Iron	DECEMBER	METAL	mg/l	(7)	(7)	(7)	(7)	(7)	63.6	1.02	601	4.42
Iron	JANUARY	METAL	mg/l	(7)	(7)	(7)	(7)	(7)	77.2	1.05	602	182.
Iron	FEBRUARY	METAL	mg/l	(7)	(7)	(7)	(7)	(7)	42.6	0.697	998	13.3
Iron	MARCH	METAL	mg/l	(7)	(7)	(7)	(7)	(7)	64.6	0.750	629	2.70
Iron	APRIL	METAL	mg/l	(7)	(7)	(7)	(7)	(7)	75.3	0.850	1030	1.80
Lead	MAY	METAL	mg/l	(7)	(7)	0.140	0.060	(7)	2	0.100	3.00	0.060
Lead	JUNE	METAL	mg/l	(7)	(7)	0.040	0.017	(7)	0.097	0.009	3.30	0.019
Lead	JULY	METAL	mg/l	(7)	(7)	0.042	0.016	(7)	0.256	0.008	5.00	0.086
Lead	AUGUST	METAL	mg/l	(7)	(7)	0.012	0 (9)	(7)	1.500	0 (9)	9.90	0.014
Lead	SEPTEMBER	METAL	mg/l	(7)	(7)	0.012	0 (9)	(7)	0.580	0.012	11.7	0.020
Lead	OCTOBER	METAL	mg/l	(7)	(7)	0.032	0.021	(7)	0.598	0.015	6.48	0.051
Lead	NOVEMBER	METAL	mg/l	(7)	(7)	0.063	0.016	(7)	0.110	0.013	7.38	6.350
Lead	DECEMBER	METAL	mg/l	(7)	(7)	0.058	0.032	(7)	0.350	0.012	5.79	0.066
Lead	JANUARY	METAL	mg/l	(7)	(7)	0 (9)	0 (9)	(7)	1.110	0 (9)	11.0	0.938
Lead	FEBRUARY	METAL	mg/l	(7)	(7)	0.021	0.015	(7)	0.228	0 (9)	7.36	0.084
Lead	MARCH	METAL	mg/l	(7)	(7)	0.019	0 (9)	(7)	0.580	0.010	7.00	0.012
Lead	APRIL	METAL	mg/l	(7)	(7)	0.021	0.010	(7)	0.800	0.012	8.40	0.010
Manganese	MAY	METAL	mg/l	0.597	0.274	0.899	0.700	0.481	6.53	0.584	9.47	1.090
Manganese	JUNE	METAL	mg/l	0.438	0.323	0.954	0.732	0.478	1.42	0.403	12.3	0.682
Manganese	JULY	METAL	mg/l	0.939	0.121	0.804	0.621	0.396	1.28	0.465	14.7	1.720
Manganese	AUGUST	METAL	mg/l	0.222	0.158	0.237	0.178	0.158	1.47	0.202	10.9	0.240
Manganese	SEPTEMBER	METAL	mg/l	0.273	0.174	0.483	0.273	0.230	1.22	0.242	16.2	0.515
Manganese	OCTOBER	METAL	mg/l	0.621	0.487	1.440	1.080	0.600	1.71	0.435	11.8	1.640
Manganese	NOVEMBER	METAL	mg/l	43	0.192	0.588	0.298	0.241	1.93	0.245	9.89	16.1
Manganese	DECEMBER	METAL	mg/l	0.151	0.072	0.263	0.193	0.141	1.23	0.175	9.68	0.351
Manganese	JANUARY	METAL	mg/l	38.5	0.072	0.565	0.358	0.202	1.94	0.238	10.0	6.00
Manganese	FEBRUARY	METAL	mg/l	0.794	0.226	0.660	0.516	0.357	1.44	0.345	19.7	2.62
Manganese	MARCH	METAL	mg/l	0.680	0.120	0.600	0.440	0.230	2.00	0.230	14.6	0.690
Manganese	APRIL	METAL	mg/l	0.690	0.074	1.200	0.230	0.240	2.10	0.430	22.8	0.170

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PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
Mercury	MAY	METAL	mg/l	0.0016	0 (9)	0 (9)	0 (9)	0 (9)	0.0045	0 (9)	0.0055	0 (9)
Mercury	JUNE	METAL	mg/l	0.0009	0 (9)	0 (9)	0 (9)	0 (9)	0.0014	0 (9)	0.0075	0 (9)
Mercury	JULY	METAL	mg/l	(5)	0 (9)	0 (9)	0 (9)	0 (9)	(5)	0 (9)	0.012	0 (9)
Mercury	AUGUST	METAL	mg/l	0.0024	0 (9)	0 (9)	0 (9)	0 (9)	0.0059	0 (9)	0.042	0 (9)
Mercury	SEPTEMBER	METAL	mg/l	0.0033	0 (9)	0 (9)	0 (9)	0 (9)	0.0030	0 (9)	0.089	0 (9)
Mercury	OCTOBER	METAL	mg/l	0.0053	0 (9)	0 (9)	0.0006	0 (9)	0.0038	0 (9)	0.019	0.0006
Mercury	NOVEMBER	METAL	mg/l	(5)	0 (9)	0 (9)	0 (9)	0 (9)	0.0042	0 (9)	0.016	0.013
Mercury	DECEMBER	METAL	mg/l	0.0008	0.0007	0.0006	0 (9)	0 (9)	0.0022	0 (9)	0.014	0 (9)
Mercury	JANUARY	METAL	mg/l	0.0007	0 (9)	0 (9)	0 (9)	0 (9)	0.0040	0 (9)	0.022	0.013
Mercury	FEBRUARY	METAL	mg/l	0.0019	0 (9)	0 (9)	0 (9)	0 (9)	0.0010	0 (9)	0.012	0 (9)
Mercury	MARCH	METAL	mg/l	0.0014	0 (9)	0 (9)	0 (9)	0 (9)	0.0019	0 (9)	0.014	0 (9)
Mercury	APRIL	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Methylene Chloride	MAY	VOL	ug/l	0 (9)	0 (9)	5	5	0 (9)	0 (9)	0 (9)	0 (9)	7
Methylene Chloride	JUNE	VOL	ug/l	0 (9)	0 (9)	6	5	54	30	50	100	0 (9)
Methylene Chloride	JULY	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	31	380	0 (9)	13	26
Methylene Chloride	AUGUST	VOL	ug/l	1300	880	10	6	7	10	18	12	12
Methylene Chloride	SEPTEMBER	VOL	ug/l	1400	1500	0 (9)	0 (9)	54	84	0 (9)	6	10
Methylene Chloride	OCTOBER	VOL	ug/l	1600	1700	44	140	180	260	50	60	48
Methylene Chloride	NOVEMBER	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	23	18	0 (9)	140	10
Methylene Chloride	DECEMBER	VOL	ug/l	11000	2400	41	47	64	55	66	30	4
Methylene Chloride	JANUARY	VOL	ug/l	940	83	0 (9)	8	100	100	39	65	15
Methylene Chloride	FEBRUARY	VOL	ug/l	340	180	38	19	15	18	16	150	55
Methylene Chloride	MARCH	VOL	ug/l	1800	890	13	16	23	12	17	46	21
Methylene Chloride	APRIL	VOL	ug/l	875	315	32	8	5	7	14	5	12
Naphthalene	MAY	SEMI	ug/l	46	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Naphthalene	JUNE	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Naphthalene	JULY	SEMI	ug/l	0 (9)	35	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	1
Naphthalene	AUGUST	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Naphthalene	SEPTEMBER	SEMI	ug/l	41	45	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	2
Naphthalene	OCTOBER	SEMI	ug/l	54	26	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)

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APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
	SAMPLE LOCATION NO:			1	2	3	4	5	8	9	10	11
Naphthalene	NOVEMBER	SEMI	ug/l	300	33	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Naphthalene	DECEMBER	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Naphthalene	JANUARY	SEMI	ug/l	23	11	2	2	0 (9)	3	0 (9)	0 (9)	0 (9)
Naphthalene	FEBRUARY	VOLLS(4)	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	6	0 (9)	0 (9)	0 (9)	50
Naphthalene	MARCH	VOLLS(4)	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	70	0 (9)	50	0 (9)
Naphthalene	MARCH	SEMI	ug/l	100	43	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Naphthalene	APRIL	VOLLS(4)	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	20	0 (9)	200	0 (9)	0 (9)
Naphthalene	APRIL	SEMI	ug/l	0 (9)	0 (9)	19	17	0 (9)	0 (9)	0 (9)	0 (9)	19
Nickel	MAY	METAL	mg/l	(7)	(7)	0.056	0.046	(7)	3.68	0.125	5.41	0.206
Nickel	JUNE	METAL	mg/l	(7)	(7)	0 (9)	0.020	(7)	1.49	0.187	17.0	0.031
Nickel	JULY	METAL	mg/l	(7)	(7)	0.028	0.021	(7)	1.07	0.100	21.3	0.137
Nickel	AUGUST	METAL	mg/l	(7)	(7)	0 (9)	0 (9)	(7)	3.53	0.210	27.5	0.067
Nickel	SEPTEMBER	METAL	mg/l	(7)	(7)	0.051	0.033	(7)	2.02	0.149	30.8	0.095
Nickel	OCTOBER	METAL	mg/l	(7)	(7)	0.040	0.039	(7)	2.05	0.217	22.3	0.081
Nickel	NOVEMBER	METAL	mg/l	(7)	(7)	0.027	0 (9)	(7)	3.70	0.206	22.5	6.520
Nickel	DECEMBER	METAL	mg/l	(7)	(7)	0.022	0.025	(7)	2.57	0.208	21.2	0.098
Nickel	JANUARY	METAL	mg/l	(7)	(7)	0.026	0.046	(7)	6.20	0.141	48.3	2.620
Nickel	FEBRUARY	METAL	mg/l	(7)	(7)	0.022	0.020	(7)	1.98	0.290	40.2	0.136
Nickel	MARCH	METAL	mg/l	(7)	(7)	0 (9)	0.022	(7)	1.80	0.098	17.6	0.026
Nickel	APRIL	METAL	mg/l	(7)	(7)	0.066	0 (9)	(7)	1.60	0.056	16.8	0.038
Nitrobenzene	MAY	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	14	13	0 (9)	0 (9)	0 (9)
Nitrobenzene	JUNE	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Nitrobenzene	JULY	SEMI	ug/l	90	100	0 (9)	0 (9)	14	8	0 (9)	0 (9)	0 (9)
Nitrobenzene	AUGUST	SEMI	ug/l	56	98	0 (9)	0 (9)	12	8	0 (9)	0 (9)	0 (9)
Nitrobenzene	SEPTEMBER	SEMI	ug/l	95	160	0 (9)	0 (9)	25	22	0 (9)	0 (9)	0 (9)
Nitrobenzene	OCTOBER	SEMI	ug/l	0 (9)	93	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)

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PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
	SAMPLE LOCATION NO:			1	2	3	4	5	8	9	10	11
Nitrobenzene	NOVEMBER	SEMI	ug/l	0 (9)	58	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Nitrobenzene	DECEMBER	SEMI	ug/l	140	120	0 (9)	0 (9)	0 (9)	0 (9)	3	0 (9)	0 (9)
Nitrobenzene	JANUARY	SEMI	ug/l	120	73	0 (9)	0 (9)	13	12	8	0 (9)	0 (9)
Nitrobenzene	FEBRUARY	SEMI	ug/l	180	110	0 (9)	0 (9)	15	12	0 (9)	0 (9)	0 (9)
Nitrobenzene	MARCH	SEMI	ug/l	0 (9)	62	0 (9)	0 (9)	8	0 (9)	0 (9)	0 (9)	0 (9)
Nitrobenzene	APRIL	SEMI	ug/l	0 (9)	240	0 (9)	0 (9)	12	0 (9)	0 (9)	0 (9)	0 (9)
Oil and Grease	MAY	WC	mg/l	44	6	18	9	20	23	7	220	14
Oil and Grease	JUNE	WC	mg/l	150	9	21	12	6	10	8	360	29
Oil and Grease	JULY	WC	mg/l	120	13	35	13	0 (9)	24	5	660	69
Oil and Grease	AUGUST	WC	mg/l	86	33	31	38	0 (9)	32	0 (9)	860	19
Oil and Grease	SEPTEMBER	WC	mg/l	75	46	28	19	5	110	10	1200	24
Oil and Grease	OCTOBER	WC	mg/l	28	19	28	21	6	120	5	1200	750
Oil and Grease	NOVEMBER	WC	mg/l	900	55	28	20	10.	28	13.	68	37
Oil and Grease	DECEMBER	WC	mg/l	56	26	31	25	6.0	27	7.0	640	32
Oil and Grease	JANUARY	WC	mg/l	83	20	40	18	8.0	210	8.0	73	650
Oil and Grease	FEBRUARY	WC	mg/l	74	31	36	20	5.0	140	10.	2000	26
Oil and Grease	MARCH	WC	mg/l	48	14	26	18	6.0	20	5.8	660	41
Oil and Grease	APRIL	WC	mg/l	160	18	34	9.0	0 (9)	57	7.0	190	210
Phenol	MAY	SEMI	ug/l	0 (9)	0 (9)	12	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Phenol	JUNE	SEMI	ug/l	0 (9)	0 (9)	14	12	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Phenol	JULY	SEMI	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Phenol	AUGUST	SEMI	ug/l	100	86	10	7	0 (9)	0 (9)	0 (9)	11	0 (9)
Phenol	SEPTEMBER	SEMI	ug/l	160	160	17	13	0 (9)	0 (9)	0 (9)	0 (9)	10
Phenol	OCTOBER	SEMI	ug/l	0 (9)	0 (9)	13	13	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Phenol	NOVEMBER	SEMI	ug/l	0 (9)	0 (9)	16	15	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Phenol	DECEMBER	SEMI	ug/l	130	130	17	16	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Phenol	JANUARY	SEMI	ug/l	88	81	9	7	0 (9)	0 (9)	7	1500	560
Phenol	FEBRUARY	SEMI	ug/l	74	88	9	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	6
Phenol	MARCH	SEMI	ug/l	0 (9)	72	13	11	0 (9)	0 (9)	0 (9)	0 (9)	10
Phenol	APRIL	SEMI	ug/l	0 (9)	310	16	9	0 (9)	0 (9)	0 (9)	0 (9)	130

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APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
	SAMPLE LOCATION NO:			1	2	3	4	5	8	9	10	11
Phenolics	MAY	WC	mg/l	0.78	0.87	0.056	0.079	0.22	0.21	0.74	1.2	0.14
Phenolics	JUNE	WC	mg/l	0.58	1.3	0.030	0.062	0.13	0.14	0.066	0.27	0.072
Phenolics	JULY	WC	mg/l	1.1	1.6	0.120	0.047	0.16	0.20	1.3	0.59	0.11
Phenolics	AUGUST	WC	mg/l	0.75	2.6	0.093	0.065	0.24	1.40	0.38	0.60	0.13
Phenolics	SEPTEMBER	WC	mg/l	1.2	1.5	0.082	0.081	0.15	0.24	0.19	0.90	0.14
Phenolics	OCTOBER	WC	mg/l	0.71	1.5	0.052	0.063	0.12	0.15	0.51	0.49	0.12
Phenolics	NOVEMBER	WC	mg/l	1.8	1.1	0.10	0.84	0.22	0.33	0.32	4.0	0.18
Phenolics	DECEMBER	WC	mg/l	0.97	2.7	0.092	0.076	0.22	0.19	0.24	0.72	0.074
Phenolics	JANUARY	WC	mg/l	1.5	1.1	0.094	0.096	0.24	0.27	0.65	0.52	0.24
Phenolics	FEBRUARY	WC	mg/l	1.0	0.95	(5)	0.15	0.091	0.26	0.25	0.090	0.25
Phenolics	MARCH	WC	mg/l	0.69	0.52	0.092	0.092	0 (9)	0.06	0.16	0.32	0.19
Phenolics	APRIL	WC	mg/l	1.6	1.4	0.12	0.075	0.17	0.76	0 062	2.60	0.28
Selenium	MAY	METAL	mg/l	0.054	0 (9)	0 (9)	0 (9)	0 (9)	0.082	0 (9)	0.12	0 (9)
Selenium	JUNE	METAL	mg/l	0.017	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.011	0 (9)	0 (9)
Selenium	JULY	METAL	mg/l	0.069	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.059	0 (9)
Selenium	AUGUST	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.097	0 (9)
Selenium	SEPTEMBER	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.20	0 (9)
Selenium	OCTOBER	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.042	0 (9)
Selenium	NOVEMBER	METAL	mg/l	0.030	0 (9)	0 (9)	0.006	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Selenium	DECEMBER	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.15	0 (9)
Selenium	JANUARY	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Selenium	FEBRUARY	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.015	0 (9)	0 (9)
Selenium	MARCH	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Selenium	APRIL	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.10	0 (9)
Silver	MAY	METAL	mg/l	0.075	0 (9)	0 (9)	0 (9)	0 (9)	0.089	0 (9)	0.132	0 (9)
Silver	JUNE	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.132	0 (9)
Silver	JULY	METAL	mg/l	0.288	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.234	0 (9)
Silver	AUGUST	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.054	0 (9)	0.415	0 (9)
Silver	SEPTEMBER	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.350	0 (9)
Silver	OCTOBER	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.231	0 (9)

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APPENDIX A-1
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PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
Silver	NOVEMBER	METAL	mg/l	0.086	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.097	0.103
Silver	DECEMBER	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Silver	JANUARY	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.172	0 (9)
Silver	FEBRUARY	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.158	0 (9)
Silver	MARCH	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0.240	0 (9)
Silver	APRIL	METAL	mg/l	0 (9)	0 (9)	0 (9)	0 (9)	(5)	0 (9)	0 (9)	0.230	0 (9)
Sulfates	MAY	WC	mg/l	1300	1100	880	690	950	910	890	1200	640
Sulfates	JUNE	WC	mg/l	1600	1600	900	800	1000	1100	940	780	1600
Sulfates	JULY	WC	mg/l	570	580	680	660	660	770	850	0 (9)	680
Sulfates	AUGUST	WC	mg/l	870	860	690	670	800	1100	870	1000	660
Sulfates	SEPTEMBER	WC	mg/l	750	750	980	1000	960	960	890	1300	900
Sulfates	OCTOBER	WC	mg/l	1100	840	1100	1000	1000	890	970	940	1100
Sulfates	NOVEMBER	WC	mg/l	1100	1000	1400	1000	860	1200	840	250	640
Sulfates	DECEMBER	WC	mg/l	980	890	1000	930	960	1300	990	1900	910
Sulfates	JANUARY	WC	mg/l	1300	1400	1100	1000	1100	1200	1200	1800	1200
Sulfates	FEBRUARY	WC	mg/l	2000	1800	700	610	850	1200	860	1600	660
Sulfates	MARCH	WC	mg/l	1530	1330	1060	1040	1020	1040	917	935	1090
Sulfates	APRIL	WC	mg/l	1260	1170	781	554	677	1010	772	1110	601
TDS	MAY	WC	mg/l	6400	6500	1500	1500	3700	3500	3600	3700	1800
TDS	JUNE	WC	mg/l	5100	6000	1400	1400	3200	3300	3300	3200	1800
TDS	JULY	WC	mg/l	3100	3400	1200	1200	2300	2200	2700	2800	1600
TDS	AUGUST	WC	mg/l	3900	6400	1300	1300	3200	3300	4100	3800	1700
TDS	SEPTEMBER	WC	mg/l	3500	3800	1700	1700	2600	2600	2700	2700	1700
TDS	OCTOBER	WC	mg/l	3700	4300	1700	1600	2600	2600	2400	2300	1800
TDS	NOVEMBER	WC	mg/l	2700	3100	1500	1400	2100	2100	2500	2100	1300
TDS	DECEMBER	WC	mg/l	4800	5100	1400	1300	3100	3100	3700	3300	1600
TDS	JANUARY	WC	mg/l	4300	6500	1500	1500	3400	3400	3900	4100	1500
TDS	FEBRUARY	WC	mg/l	9300	8300	1500	1400	3400	3500	3100	3100	1400
TDS	MARCH	WC	mg/l	7100	6800	1600	1600	3200	3310	3200	3100	1800
TDS	APRIL	WC	mg/l	6500	6400	1200	1200	3300	3100	2600	3200	1300

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PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
TOC(6)	MAY	WC	mg/l	(7)	(7)	(7)	(7)	(7)	150	49.0	4200	98
TOC(6)	JUNE	WC	mg/l	(7)	(7)	(7)	(7)	(7)	660	38.0	330	30
TOC(6)	JULY	WC	mg/l	(7)	(7)	(7)	(7)	(7)	36.5	28.5	295	130
TOC(6)	AUGUST	WC	mg/l	(7)	(7)	(7)	(7)	(7)	50.5	8.30	135	52
TOC(6)	SEPTEMBER	WC	mg/l	(7)	(7)	(7)	(7)	(7)	41	18.5	95	44.5
TOC(6)	OCTOBER	WC	mg/l	(7)	(7)	(7)	(7)	(7)	36	30.0	160	62
TOC(6)	NOVEMBER	WC	mg/l	(7)	(7)	(7)	(7)	(7)	88.	24	375	135
TOC(6)	DECEMBER	WC	mg/l	(7)	(7)	(7)	(7)	(7)	92.	29	500	62.5
TOC(6)	JANUARY	WC	mg/l	(7)	(7)	(7)	(7)	(7)	38.5	44	350	100
TOC(6)	FEBRUARY	WC	mg/l	(7)	(7)	(7)	(7)	(7)	41.	37	315	56.5
TOC	MARCH	WC	mg/l	(7)	(7)	(7)	(7)	(7)	44.	32	180	53
TOC	APRIL	WC	mg/l	(7)	(7)	(7)	(7)	(7)	61.5	27	608	89.2
TSS	MAY	WC	mg/l	(7)	(7)	(7)	(7)	(7)	1700	46	11000	68
TSS	JUNE	WC	mg/l	(7)	(7)	(7)	(7)	(7)	(5)	35	15000	130
TSS	JULY	WC	mg/l	(7)	(7)	(7)	(7)	(7)	1500	42	24000	410
TSS	AUGUST	WC	mg/l	(7)	(7)	(7)	(7)	(7)	2400	32	15000	91
TSS	SEPTEMBER	WC	mg/l	(7)	(7)	(7)	(7)	(7)	1700	31	26000	140
TSS	OCTOBER	WC	mg/l	(7)	(7)	(7)	(7)	(7)	2000	40	19000	160
TSS	NOVEMBER	WC	mg/l	(7)	(7)	(7)	(7)	(7)	2200	44	23000	8300
TSS	DECEMBER	WC	mg/l	(7)	(7)	(7)	(7)	(7)	2200	49	23000	160
TSS	JANUARY	WC	mg/l	(7)	(7)	(7)	(7)	(7)	(5)	39	(5)	4400
TSS	FEBRUARY	WC	mg/l	(7)	(7)	(7)	(7)	(7)	1700	27	30000	250
TSS	MARCH	WC	mg/l	(7)	(7)	(7)	(7)	(7)	2800	52	28200	8
TSS	APRIL	WC	mg/l	(7)	(7)	(7)	(7)	(7)	3900	68	50000	150
Toluene	MAY	VOL	ug/l	290	390	12	13	0 (9)	0 (9)	0 (9)	44	16
Toluene	JUNE	VOL	ug/l	0 (9)	250	35	15	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Toluene	JULY	VOL	ug/l	1000	400	18	18	2	19	0 (9)	5	16
Toluene	AUGUST	VOL	ug/l	1700	0 (9)	6	7	0 (9)	0 (9)	0 (9)	0 (9)	7
Toluene	SEPTEMBER	VOL	ug/l	0 (9)	0 (9)	5	7	0 (9)	30	0 (9)	0 (9)	17
Toluene	OCTOBER	VOL	ug/l	100	200	21	13	0 (9)	14	3	5	5

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<u>RESULTS OF GULF COAST SAMPLING</u>

<u>PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES</u>

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
	SAMPLE LOCATION NO:			1	2	3	4	5	8	9	10	11
Toluene	NOVEMBER	VOL	ug/l	180	190	7	10	0 (9)	0 (9)	0 (9)	0 (9)	6
Toluene	DECEMBER	VOL	ug/l	1600	180	24	21	4	5	5	0 (9)	10
Toluene	JANUARY	VOL	ug/l	0 (9)	0 (9)	6	6	0 (9)	4	3	0 (9)	0 (9)
Toluene	FEBRUARY	VOL	ug/l	130	93	5	16	3	7	2	0 (9)	0 (9)
Toluene	MARCH	VOL	ug/l	400	0 (9)	590	350	0 (9)	2	0 (9)	0 (9)	240
Toluene	APRIL	VOL	ug/l	0 (9)	65	5	5	0 (9)	2	0 (9)	2	11
Trichloroethene	MAY	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Trichloroethene	JUNE	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Trichloroethene	JULY	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Trichloroethene	AUGUST	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Trichloroethene	SEPTEMBER	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Trichloroethene	OCTOBER	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	5	0 (9)
Trichloroethene	NOVEMBER	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Trichloroethene	DECEMBER	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Trichloroethene	JANUARY	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Trichloroethene	FEBRUARY	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Trichloroethene	MARCH	VOL	ug/l	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)	0 (9)
Trichloroethene	APRIL	VOL	ug/l	105	500	0 (9)	0 (9)	4	13	10	4	0 (9)
Xylene	MAY	VOL	ug/l	3600	5400	66	83	480	700	480	1400	110
Xylene	MAY	SEMILS(3)	ug/l	750	1000	0 (9)	0 (9)	0 (9)	84	59	96	0 (9)
Xylene	MAY	SEMILS(3)	ug/l	260	0 (9)	0 (9)	0 (9)	0 (9)	39	0 (9)	46	0 (9)
Xylene	JUNE	VOL	ug/l	10000	13000	110	49	65	150	76	130	68
Xylene	JULY	VOL	ug/l	8800	9000	97	75	64	63	120	180	120
Xylene	AUGUST	VOL	ug/l	29000	2200	33	34	53	69	25	75	43
Xylene	SEPTEMBER	VOL	ug/l	1100	1800	55	110	96	96	79	120	260
Xylene	OCTOBER	VOL	ug/l	1100	2200	170	79	150	200	150	150	55
Xylene	NOVEMBER	VOL	ug/l	3500	7500	76	120	90	130	65	95	54
Xylene	DECEMBER	VOL	ug/l	5300	3900	440	340	230	310	260	300	260
Xylene	JANUARY	VOL	ug/l	3300	4200	55	48	200	280	260	400	76
Xylene	FEBRUARY	VOL	ug/l	5800	3200	16	72	170	210	140	560	33

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RESULTS OF GULF COAST SAMPLING

PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

PARAMETER	SAMPLING MONTH(1)	ANALYSIS METHOD(2)	UNITS	P-CHEM INFLUENT	P-CHEM EFFLUENT	ABTP PRIMARY INFLUENT	ABTP PRIMARY EFFLUENT	ABTP FINAL EFFLUENT	ABTP AERATION BASIN EFFLUENT	OVERFLOW FROM ABTP SECONDARY THICKENERS	UNDERFLOW FROM ABTP SECONDARY THICKENERS	OVERFLOW FROM ABTP PRIMARY THICKENERS
		SAMPLE LOCATION NO:		1	2	3	4	5	8	9	10	11
Xylene	MARCH	VOL	ug/l	4500	2900	260	400	52	63	45	86	240
Xylene	APRIL	VOL	ug/l	1700	1200	47	75	17	20	21	9	88
Zinc	MAY	METAL	mg/l	(7)	(7)	0.442	0.290	(7)	13.9	0.310	20.9	0.377
Zinc	JUNE	METAL	mg/l	(7)	(7)	0.262	1.640	(7)	4.13	1.35	48.8	0.865
Zinc	JULY	METAL	mg/l	(7)	(7)	0.200	0.074	(7)	3.52	0.099	52.6	0.526
Zinc	AUGUST	METAL	mg/l	(7)	(7)	0.102	0.045	(7)	11.9	0.094	100.	0.150
Zinc	SEPTEMBER	METAL	mg/l	(7)	(7)	0.083	0.025	(7)	10.1	0.158	155.	0.197
Zinc	OCTOBER	METAL	mg/l	(7)	(7)	0.192	0.109	(7)	8.74	0.116	91.8	0.245
Zinc	NOVEMBER	METAL	mg/l	(7)	(7)	0.133	0.056	(7)	9.08	0.103	47.1	24.4
Zinc	DECEMBER	METAL	mg/l	(7)	(7)	0.153	0.075	(7)	5.34	0.096	45.5	0.285
Zinc	JANUARY	METAL	mg/l	(7)	(7)	0.084	0.163	(7)	32.0	0.382	171.	15.8
Zinc	FEBRUARY	METAL	mg/l	(7)	(7)	0.106	0.086	(7)	5.26	0.140	82.6	0.561
Zinc	MARCH	METAL	mg/l	(7)	(7)	0.100	0.077	(7)	5.40	0.120	42.5	0.092
Zinc	APRIL	METAL	mg/l	(7)	(7)	0.130	0.036	(7)	4.60	0.120	50.2	0.037
pH	MAY	WC	S.U	(7)	(7)	(7)	(7)	(7)	7.50	7.60	7.60	8.10
pH	JUNE	WC	S.U	(7)	(7)	(7)	(7)	(7)	7.63	7.62	7.28	8.11
pH	JULY	WC	S.U	(7)	(7)	(7)	(7)	(7)	7.77	7.79	7.57	7.28
pH	AUGUST	WC	S.U	(7)	(7)	(7)	(7)	(7)	7.84	7.69	7.42	8.29
pH	SEPTEMBER	WC	S.U	(7)	(7)	(7)	(7)	(7)	7.78	7.52	7.26	8.11
pH	OCTOBER	WC	S.U	(7)	(7)	(7)	(7)	(7)	7.64	7.48	7.29	7.85
pH	NOVEMBER	WC	S.U	(7)	(7)	(7)	(7)	(7)	7.68	7.47	7.59	8.81
pH	DECEMBER	WC	S.U	(7)	(7)	(7)	(7)	(7)	7.83	7.59	7.42	8.36
pH	JANUARY	WC	S.U	(7)	(7)	(7)	(7)	(7)	8.41	8.21	8.07	8.45
pH	FEBRUARY	WC	S.U	(7)	(7)	(7)	(7)	(7)	7.79	7.73	7.58	8.26
pH	MARCH	WC	S.U	(7)	(7)	(7)	(7)	(7)	8.20	8.20	7.80	8.20
pH	APRIL	WC	S.U	(7)	(7)	(7)	(7)	(7)	8.00	7.60	7.30	8.50

NOTES:

(1) Sampling occurred once per month May 1988 through and including April 1989.

APPENDIX A-1
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN WASTEWATER SAMPLES

(2) Analysis methods are identified as follows:
WC- Wet Chemistry Analysis
METAL-Metals Analysis
PEST-GCMS Scan for Pesiticides
VOL-GCMS Scan for Volatile Organics (VOA)
VOLLS-Volatile library search to Tentatively Identify Unrecognized Peaks
SEMI-GCMS Scan for Semivolatile Organics (BNA)
SEMILS-Semivolatile library search to Tentatively Identify Unrecognized Peaks

(3) Data not used in average calculations due to duplicate, higher confidence data for same month.

(4) Data used in conjuction with scan data for average calculations.

(5) Data identified as questionable based on operational experience or plant data, and, therefore, not used.

(6) Results reported for TOC in May through February are the average of duplicate samples.
No duplicate results were reported in March and April.

(7) American Bottoms daily data used in lieu of Gulf Coast data due to greater quantity and consistency.
American Bottoms data is not included herein, but is available in monthly data summaries generated by ABTP.

(8) Too numerous to count.

(9) Parameter undetected.

APPENDIX A-2

RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

PARAMETER	P-CHEM SLUDGE	AMERICAN BOTTOMS PRIMARY/SECONDARY	SAMPLING MONTH (1)	ANALYSIS METHOD (2)
Sampling Location No:	6	7		
1,1,1-Trichloroethane	4400. ug/kg dry	0. ug/kg dry	MAY	VOL
1,1,1-Trichloroethane	0. ug/kg dry	2300. ug/kg dry	JUNE	VOL
1,1,1-Trichloroethane	0. ug/kg dry	0. ug/kg dry	JULY	VOL
1,1,1-Trichloroethane	0. ug/kg dry	0. ug/kg dry	AUGUST	VOL
1,1,1-Trichloroethane	0. ug/kg dry	0. ug/kg dry	SEPTEMBER	VOL
1,1,1-Trichloroethane	0. ug/kg dry	0. ug/kg dry	OCTOBER	VOL
1,1,1-Trichloroethane	18000. ug/kg dry	310. ug/kg dry	NOVEMBER	VOL
1,1,1-Trichloroethane	0. ug/kg dry	0. ug/kg dry	DECEMBER	VOL
1,1,1-Trichloroethane	(5)	0. ug/kg dry	JANUARY	VOL
1,1,1-Trichloroethane	17000. ug/kg dry	0. ug/kg dry	FEBRUARY	VOL
1,1,1-Trichloroethane	0. ug/kg dry	0. ug/kg dry	MARCH	VOL
1,1,1-Trichloroethane	0. ug/kg dry	0. ug/kg dry	APRIL	VOL
1,2-Dichlorobenzene	120000. ug/kg dry	0. ug/kg dry	MAY	SEMI
1,2-Dichlorobenzene	310000. ug/kg dry	1800. ug/kg dry	JUNE	SEMI
1,2-Dichlorobenzene	200000. ug/kg dry	3800. ug/kg dry	JULY	SEMI
1,2-Dichlorobenzene	180000. ug/kg dry	2000. ug/kg dry	AUGUST	SEMI
1,2-Dichlorobenzene	210000. ug/kg dry	2300. ug/kg dry	SEPTEMBER	VOLLS(3)
1,2-Dichlorobenzene	310. ug/kg dry	1800. ug/kg dry	SEPTEMBER	SEMI
1,2-Dichlorobenzene	44000. ug/kg dry	1400. ug/kg dry	OCTOBER	SEMI
1,2-Dichlorobenzene	150000. ug/kg dry	0. ug/kg dry	NOVEMBER	SEMI
1,2-Dichlorobenzene	140000. ug/kg dry	0. ug/kg dry	DECEMBER	SEMI
1,2-Dichlorobenzene	(5)	0. ug/kg dry	JANUARY	SEMI
1,2-Dichlorobenzene	58000. ug/kg dry	0. ug/kg dry	FEBRUARY	SEMI
1,2-Dichlorobenzene	170000. ug/kg dry	4000. ug/kg dry	MARCH	SEMI
1,2-Dichlorobenzene	23000. ug/kg dry	25000. ug/kg dry	APRIL	SEMI
1,3-Dichlorobenzene	0. ug/kg dry	0. ug/kg dry	MAY	SEMI
1,3-Dichlorobenzene	0. ug/kg dry	0. ug/kg dry	JUNE	SEMI
1,3-Dichlorobenzene	0. ug/kg dry	0. ug/kg dry	JULY	SEMI
1,3-Dichlorobenzene	15000. ug/kg dry	0. ug/kg dry	AUGUST	SEMI
1,3-Dichlorobenzene	0. ug/kg dry	0. ug/kg dry	SEPTEMBER	SEMI
1,3-Dichlorobenzene	0. ug/kg dry	0. ug/kg dry	OCTOBER	SEMI
1,3-Dichlorobenzene	19000. ug/kg dry	0. ug/kg dry	NOVEMBER	SEMI
1,3-Dichlorobenzene	0. ug/kg dry	0. ug/kg dry	DECEMBER	SEMI
1,3-Dichlorobenzene	(5)	0. ug/kg dry	JANUARY	SEMI
1,3-Dichlorobenzene	3100. ug/kg dry	0. ug/kg dry	FEBRUARY	SEMI
1,3-Dichlorobenzene	13000. ug/kg dry	0. ug/kg dry	MARCH	SEMI
1,3-Dichlorobenzene	0. ug/kg dry	0. ug/kg dry	APRIL	SEMI
1,4-Dichlorobenzene	140000. ug/kg dry	0. ug/kg dry	MAY	SEMI
1,4-Dichlorobenzene	300000. ug/kg dry	1400. ug/kg dry	JUNE	SEMI
1,4-Dichlorobenzene	160000. ug/kg dry	3200. ug/kg dry	JULY	SEMI
1,4-Dichlorobenzene	140000. ug/kg dry	0. ug/kg dry	AUGUST	SEMI
1,4-Dichlorobenzene	140. ug/kg dry	0. ug/kg dry	SEPTEMBER	SEMI
1,4-Dichlorobenzene	91000. ug/kg dry	0. ug/kg dry	OCTOBER	SEMI

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

PARAMETER	P-CHEM SLUDGE	AMERICAN BOTTOMS PRIMARY/SECONDARY	SAMPLING MONTH (1)	ANALYSIS METHOD (2)
Sampling Location No:	6	7		
1,4-Dichlorobenzene	210000. ug/kg dry	0. ug/kg dry	NOVEMBER	SEMI
1,4-Dichlorobenzene	200000. ug/kg dry	2800. ug/kg dry	DECEMBER	SEMI
1,4-Dichlorobenzene	(5)	0. ug/kg dry	JANUARY	SEMI
1,4-Dichlorobenzene	79000. ug/kg dry	0. ug/kg dry	FEBRUARY	SEMI
1,4-Dichlorobenzene	330000. ug/kg dry	7500. ug/kg dry	MARCH	SEMI
1,4-Dichlorobenzene	32000. ug/kg dry	65000. ug/kg dry	APRIL	SEMI
2-Butanone	0. ug/kg dry	0. ug/kg dry	MAY	VOL
2-Butanone	0. ug/kg dry	0. ug/kg dry	JUNE	VOL
2-Butanone	0. ug/kg dry	0. ug/kg dry	JULY	VOL
2-Butanone	0. ug/kg dry	0. ug/kg dry	AUGUST	VOL
2-Butanone	0. ug/kg dry	0. ug/kg dry	SEPTEMBER	VOL
2-Butanone	0. ug/kg dry	1200. ug/kg dry	OCTOBER	VOL
2-Butanone	14000. ug/kg dry	390. ug/kg dry	NOVEMBER	VOL
2-Butanone	0. ug/kg dry	0. ug/kg dry	DECEMBER	VOL
2-Butanone	(5)	0. ug/kg dry	JANUARY	VOL
2-Butanone	0. ug/kg dry	0. ug/kg dry	FEBRUARY	VOL
2-Butanone	0. ug/kg dry	0. ug/kg dry	MARCH	VOL
2-Butanone	0. ug/kg dry	0. ug/kg dry	APRIL	VOL
2-Nitroaniline	0. ug/kg dry	0. ug/kg dry	MAY	SEMI
2-Nitroaniline	0. ug/kg dry	0. ug/kg dry	JUNE	SEMI
2-Nitroaniline	0. ug/kg dry	0. ug/kg dry	JULY	SEMI
2-Nitroaniline	0. ug/kg dry	0. ug/kg dry	AUGUST	SEMI
2-Nitroaniline	29. ug/kg dry	0. ug/kg dry	SEPTEMBER	SEMI
2-Nitroaniline	0. ug/kg dry	0. ug/kg dry	OCTOBER	SEMI
2-Nitroaniline	66000. ug/kg dry	0. ug/kg dry	NOVEMBER	SEMI
2-Nitroaniline	90000. ug/kg dry	0. ug/kg dry	DECEMBER	SEMILS(4)
2-Nitroaniline	(5)	0. ug/kg dry	JANUARY	SEMI
2-Nitroaniline	0. ug/kg dry	0. ug/kg dry	FEBRUARY	SEMI
2-Nitroaniline	0. ug/kg dry	0. ug/kg dry	MARCH	SEMI
2-Nitroaniline	0. ug/kg dry	540000. ug/kg dry	APRIL	SEMI
4-Chloroaniline	30000. ug/kg dry	0. ug/kg dry	MAY	SEMI
4-Chloroaniline	0. ug/kg dry	0. ug/kg dry	JUNE	SEMI
4-Chloroaniline	33000. ug/kg dry	0. ug/kg dry	JULY	SEMI
4-Chloroaniline	0. ug/kg dry	0. ug/kg dry	AUGUST	SEMI
4-Chloroaniline	0. ug/kg dry	0. ug/kg dry	SEPTEMBER	SEMI
4-Chloroaniline	0. ug/kg dry	0. ug/kg dry	OCTOBER	SEMI
4-Chloroaniline	83000. ug/kg dry	0. ug/kg dry	NOVEMBER	SEMI
4-Chloroaniline	60000. ug/kg dry	0. ug/kg dry	DECEMBER	SEMILS(4)
4-Chloroaniline	(5)	0. ug/kg dry	JANUARY	SEMI
4-Chloroaniline	0. ug/kg dry	0. ug/kg dry	FEBRUARY	SEMI
4-Chloroaniline	140000. ug/kg dry	23000. ug/kg dry	MARCH	SEMI
4-Chloroaniline	0. ug/kg dry	0. ug/kg dry	APRIL	SEMI
4-Nitroaniline	0. ug/kg dry	0. ug/kg dry	MAY	SEMI
4-Nitroaniline	0. ug/kg dry	0. ug/kg dry	JUNE	SEMI
4-Nitroaniline	0. ug/kg dry	0. ug/kg dry	JULY	SEMI
4-Nitroaniline	0. ug/kg dry	0. ug/kg dry	AUGUST	SEMI
4-Nitroaniline	22. ug/kg dry	0. ug/kg dry	SEPTEMBER	SEMI
4-Nitroaniline	0. ug/kg dry	0. ug/kg dry	OCTOBER	SEMI

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

PARAMETER	P-CHEM SLUDGE	AMERICAN BOTTOMS PRIMARY/SECONDARY	SAMPLING MONTH (1)	ANALYSIS METHOD (2)
Sampling Location No:	6	7		
4-Nitroaniline	0. ug/kg dry	0. ug/kg dry	NOVEMBER	SEMI
4-Nitroaniline	0. ug/kg dry	0. ug/kg dry	DECEMBER	SEMI
4-Nitroaniline	(5)	0. ug/kg dry	JANUARY	SEMI
4-Nitroaniline	0. ug/kg dry	0. ug/kg dry	FEBRUARY	SEMI
4-Nitroaniline	0. ug/kg dry	0. ug/kg dry	MARCH	SEMI
4-Nitroaniline	0. ug/kg dry	0. ug/kg dry	APRIL	SEMI
Acetone	200000. ug/kg dry	15000. ug/kg dry	MAY	VOL
Acetone	790000. ug/kg dry	19000. ug/kg dry	JUNE	VOL
Acetone	35000. ug/kg dry	2800. ug/kg dry	JULY	VOL
Acetone	0. ug/kg dry	2200. ug/kg dry	AUGUST	VOL
Acetone	8000. ug/kg dry	320. ug/kg dry	SEPTEMBER	VOL
Acetone	0. ug/kg dry	9300. ug/kg dry	OCTOBER	VOL
Acetone	35000. ug/kg dry	1700. ug/kg dry	NOVEMBER	VOL
Acetone	46000. ug/kg dry	1100. ug/kg dry	DECEMBER	VOL
Acetone	(5)	5500. ug/kg dry	JANUARY	VOL
Acetone	1000000. ug/kg dry	4500. ug/kg dry	FEBRUARY	VOL
Acetone	280000. ug/kg dry	4200. ug/kg dry	MARCH	VOL
Acetone	0. ug/kg dry	3300. ug/kg dry	APRIL	VOL
Arsenic	154. mg/kg dry	84.700 mg/kg dry	MAY	METAL
Arsenic	258. mg/kg dry	51.700 mg/kg dry	JUNE	METAL
Arsenic	237. mg/kg dry	25.300 mg/kg dry	JULY	METAL
Arsenic	0.160 mg/kg dry	46.800 mg/kg dry	AUGUST	METAL
Arsenic	170. mg/kg dry	35.200 mg/kg dry	SEPTEMBER	METAL
Arsenic	132. mg/kg dry	114. mg/kg dry	OCTOBER	METAL
Arsenic	248. mg/kg dry	98.600 mg/kg dry	NOVEMBER	METAL
Arsenic	125. mg/kg dry	21.700 mg/kg dry	DECEMBER	METAL
Arsenic	(5)	12. mg/kg dry	JANUARY	METAL
Arsenic	119.900 mg/kg dry	38.400 mg/kg dry	FEBRUARY	METAL
Arsenic	96.200 mg/kg dry	62.400 mg/kg dry	MARCH	METAL
Arsenic	72.900 mg/kg dry	23.400 mg/kg dry	APRIL	METAL
Barium	437. mg/kg dry	4800. mg/kg dry	MAY	METAL
Barium	215. mg/kg dry	2390. mg/kg dry	JUNE	METAL
Barium	168. mg/kg dry	1630. mg/kg dry	JULY	METAL
Barium	289. mg/kg dry	2930. mg/kg dry	AUGUST	METAL
Barium	297. mg/kg dry	2320. mg/kg dry	SEPTEMBER	METAL
Barium	134. mg/kg dry	1920. mg/kg dry	OCTOBER	METAL
Barium	179. mg/kg dry	724. mg/kg dry	NOVEMBER	METAL
Barium	238. mg/kg dry	1660. mg/kg dry	DECEMBER	METAL
Barium	(5)	394. mg/kg dry	JANUARY	METAL
Barium	93.900 mg/kg dry	53.600 mg/kg dry	FEBRUARY	METAL
Barium	82.800 mg/kg dry	2090. mg/kg dry	MARCH	METAL
Barium	215. mg/kg dry	10800. mg/kg dry	APRIL	METAL
Benzene	510000. ug/kg dry	0. ug/kg dry	MAY	VOL
Benzene	520000. ug/kg dry	0. ug/kg dry	JUNE	VOL
Benzene	200000. ug/kg dry	500. ug/kg dry	JULY	VOL
Benzene	120000. ug/kg dry	0. ug/kg dry	AUGUST	VOL
Benzene	70000. ug/kg dry	30. ug/kg dry	SEPTEMBER	VOL
Benzene	140000. ug/kg dry	910. ug/kg dry	OCTOBER	VOL

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

PARAMETER	P-CHEM SLUDGE	AMERICAN BOTTOMS PRIMARY/SECONDARY	SAMPLING MONTH (1)	ANALYSIS METHOD (2)
Sampling Location No:	6	7		
Benzene	220000. ug/kg dry	410. ug/kg dry	NOVEMBER	VOL
Benzene	390000. ug/kg dry	170. ug/kg dry	DECEMBER	VOL
Benzene	(5)	1500. ug/kg dry	JANUARY	VOL
Benzene	0. ug/kg dry	840. ug/kg dry	FEBRUARY	VOL
Benzene	58000. ug/kg dry	310. ug/kg dry	MARCH	VOL
Benzene	230000. ug/kg dry	670. ug/kg dry	APRIL2	VOL
Beryllium	8.610 mg/kg dry	2.270 mg/kg dry	MAY	METAL
Beryllium	4.770 mg/kg dry	0.274 mg/kg dry	JUNE	METAL
Beryllium	3.200 mg/kg dry	0.561 mg/kg dry	JULY	METAL
Beryllium	4.310 mg/kg dry	0. mg/kg dry	AUGUST	METAL
Beryllium	6.190 mg/kg dry	0. mg/kg dry	SEPTEMBER	METAL
Beryllium	5.780 mg/kg dry	1.210 mg/kg dry	OCTOBER	METAL
Beryllium	3.710 mg/kg dry	0. mg/kg dry	NOVEMBER	METAL
Beryllium	8.640 mg/kg dry	0. mg/kg dry	DECEMBER	METAL
Beryllium	(5)	0. mg/kg dry	JANUARY	METAL
Beryllium	3.030 mg/kg dry	1020. mg/kg dry	FEBRUARY	METAL
Beryllium	2.300 mg/kg dry	0. mg/kg dry	MARCH	METAL
Beryllium	2. mg/kg dry	0. mg/kg dry	APRIL	METAL
Bis(2-Ethylhexyl)Phthalate	0. ug/kg dry	14000. ug/kg dry	MAY	SEMI
Bis(2-Ethylhexyl)Phthalate	0. ug/kg dry	22000. ug/kg dry	JUNE	SEMI
Bis(2-Ethylhexyl)Phthalate	0. ug/kg dry	37000. ug/kg dry	JULY	SEMI
Bis(2-Ethylhexyl)Phthalate	0. ug/kg dry	12000. ug/kg dry	AUGUST	SEMI
Bis(2-Ethylhexyl)Phthalate	0. ug/kg dry	13000. ug/kg dry	SEPTEMBER	SEMI
Bis(2-Ethylhexyl)Phthalate	0. ug/kg dry	16000. ug/kg dry	OCTOBER	SEMI
Bis(2-Ethylhexyl)Phthalate	0. ug/kg dry	21000. ug/kg dry	NOVEMBER	SEMI
Bis(2-Ethylhexyl)Phthalate	0. ug/kg dry	21000. ug/kg dry	DECEMBER	SEMI
Bis(2-Ethylhexyl)Phthalate	(5)	20000. ug/kg dry	JANUARY	SEMI
Bis(2-Ethylhexyl)Phthalate	4600. ug/kg dry	12000. ug/kg dry	FEBRUARY	SEMI
Bis(2-Ethylhexyl)Phthalate	0. ug/kg dry	91000. ug/kg dry	MARCH	SEMI
Bis(2-Ethylhexyl)Phthalate	0. ug/kg dry	60000. ug/kg dry	APRIL	SEMI
Boron	26.100 mg/kg dry	43.700 mg/kg dry	MAY	METAL
Boron	19.600 mg/kg dry	24.200 mg/kg dry	JUNE	METAL
Boron	16.600 mg/kg dry	19.300 mg/kg dry	JULY	METAL
Boron	14.400 mg/kg dry	26.400 mg/kg dry	AUGUST	METAL
Boron	23.100 mg/kg dry	49.600 mg/kg dry	SEPTEMBER	METAL
Boron	27.300 mg/kg dry	81.100 mg/kg dry	OCTOBER	METAL
Boron	42.500 mg/kg dry	31.600 mg/kg dry	NOVEMBER	METAL
Boron	41.400 mg/kg dry	0. mg/kg dry	DECEMBER	METAL
Boron	(5)	7.770 mg/kg dry	JANUARY	METAL
Boron	70.600 mg/kg dry	0. mg/kg dry	FEBRUARY	METAL
Boron	37.800 mg/kg dry	38.800 mg/kg dry	MARCH	METAL
Boron	57.800 mg/kg dry	123. mg/kg dry	APRIL	METAL
Butylbenzylphthalate	43000. ug/kg dry	0. ug/kg dry	MAY	SEMI
Butylbenzylphthalate	0. ug/kg dry	2400. ug/kg dry	JUNE	SEMI
Butylbenzylphthalate	88000. ug/kg dry	0. ug/kg dry	AUGUST	SEMI
Butylbenzylphthalate	0. ug/kg dry	0. ug/kg dry	AUGUST	SEMI
Butylbenzylphthalate	0. ug/kg dry	0. ug/kg dry	SEPTEMBER	SEMI
Butylbenzylphthalate	120000. ug/kg dry	0. ug/kg dry	OCTOBER	SEMI

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

PARAMETER	P-CHEM SLUDGE	AMERICAN BOTTOMS PRIMARY/SECONDARY	SAMPLING MONTH (1)	ANALYSIS METHOD (2)
Sampling Location No:	6	7		
Butylbenzylphthalate	160000. ug/kg dry	3200. ug/kg dry	NOVEMBER	SEMI
Butylbenzylphthalate	89000. ug/kg dry	0. ug/kg dry	DECEMBER	SEMI
Butylbenzylphthalate	(5)	0. ug/kg dry	JANUARY	SEMI
Butylbenzylphthalate	52000. ug/kg dry	3000. ug/kg dry	FEBRUARY	SEMI
Butylbenzylphthalate	0. ug/kg dry	13000. ug/kg dry	MARCH	SEMI
Butylbenzylphthalate	0. ug/kg dry	7400. ug/kg dry	APRIL	SEMI
Cadmium	430. mg/kg dry	89.900 mg/kg dry	MAY	METAL
Cadmium	223. mg/kg dry	145. mg/kg dry	JUNE	METAL
Cadmium	92.700 mg/kg dry	54.100 mg/kg dry	JULY	METAL
Cadmium	253. mg/kg dry	272. mg/kg dry	AUGUST	METAL
Cadmium	302. mg/kg dry	197. mg/kg dry	SEPTEMBER	METAL
Cadmium	272. mg/kg dry	350. mg/kg dry	OCTOBER	METAL
Cadmium	296. mg/kg dry	48.400 mg/kg dry	NOVEMBER	METAL
Cadmium	626. mg/kg dry	84.200 mg/kg dry	DECEMBER	METAL
Cadmium	(5)	35.900 mg/kg dry	JANUARY	METAL
Cadmium	411. mg/kg dry	101. mg/kg dry	FEBRUARY	METAL
Cadmium	238. mg/kg dry	42.900 mg/kg dry	MARCH	METAL
Cadmium	176. mg/kg dry	15. mg/kg dry	APRIL	METAL
Chlorides, total	9700. mg/kg dry	6900. mg/kg dry	MAY	WC
Chlorides, total	2800. mg/kg dry	2600. mg/kg dry	JUNE	WC
Chlorides, total	5300. mg/kg dry	1200. mg/kg dry	JULY	WC
Chlorides, total	2800. mg/kg dry	940. mg/kg dry	AUGUST	WC
Chlorides, total	2100. mg/kg dry	1400. mg/kg dry	SEPTEMBER	WC
Chlorides, total	780. mg/kg dry	2400. mg/kg dry	OCTOBER	WC
Chlorides, total	870. mg/kg dry	670. mg/kg dry	NOVEMBER	WC
Chlorides, total	5400. mg/kg dry	1400. mg/kg dry	DECEMBER	WC
Chlorides, total	(5)	630. mg/kg dry	JANUARY	WC
Chlorides, total	24000. mg/kg dry	1300. mg/kg dry	FEBRUARY	WC
Chlorides, total	5340. mg/kg dry	1150. mg/kg dry	MARCH	WC
Chlorides, total	14000. mg/kg dry	2500. mg/kg dry	APRIL	WC
Chloroaniline	0. ug/kg dry	80000. ug/kg dry	APRIL	SEMILS
Chlorobenzene	1200000. ug/kg dry	2900. ug/kg dry	MAY	VOL
Chlorobenzene	2600000. ug/kg dry	9700. ug/kg dry	JUNE	VOL
Chlorobenzene	76000. ug/kg dry	0. ug/kg dry	JUNE	SEMILS(3)
Chlorobenzene	1000000. ug/kg dry	19000. ug/kg dry	JULY	VOL
Chlorobenzene	4900000. ug/kg dry	4000. ug/kg dry	AUGUST	VOL
Chlorobenzene	93000. ug/kg dry	0. ug/kg dry	AUGUST	SEMILS(3)
Chlorobenzene	160000. ug/kg dry	1200. ug/kg dry	SEPTEMBER	VOL
Chlorobenzene	190000. ug/kg dry	13000. ug/kg dry	OCTOBER	VOL
Chlorobenzene	260000. ug/kg dry	1800. ug/kg dry	NOVEMBER	VOL
Chlorobenzene	750000. ug/kg dry	3100. ug/kg dry	DECEMBER	VOL
Chlorobenzene	(5)	4500. ug/kg dry	JANUARY	VOL
Chlorobenzene	14000. ug/kg dry	8300. ug/kg dry	FEBRUARY	VOL

EPA/CERRO COPPER/EIL/PCB ~~ATTORNEY WORK PRODUCT~~ /~~ATTORNEY CLIENT PRIVILEGE~~

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

PARAMETER	P-CHEM SLUDGE	AMERICAN BOTTOMS PRIMARY/SECONDARY	SAMPLING MONTH (1)	ANALYSIS METHOD (2)
Sampling Location No:	6	7		
Chlorobenzene	140000. ug/kg dry	1700. ug/kg dry	MARCH	VOL
Chlorobenzene	300000. ug/kg dry	1100. ug/kg dry	APRIL	VOL
Chloroform	0. ug/kg dry	0. ug/kg dry	MAY	VOL
Chloroform	0. ug/kg dry	0. ug/kg dry	JUNE	VOL
Chloroform	0. ug/kg dry	0. ug/kg dry	JULY	VOL
Chloroform	0. ug/kg dry	0. ug/kg dry	AUGUST	VOL
Chloroform	0. ug/kg dry	0. ug/kg dry	SEPTEMBER	VOL
Chloroform	0. ug/kg dry	0. ug/kg dry	OCTOBER	VOL
Chloroform	0. ug/kg dry	0. ug/kg dry	NOVEMBER	VOL
Chloroform	0. ug/kg dry	0. ug/kg dry	DECEMBER	VOL
Chloroform	(5)	0. ug/kg dry	JANUARY	VOL
Chloroform	15000. ug/kg dry	0. ug/kg dry	FEBRUARY	VOL
Chloroform	7000. ug/kg dry	0. ug/kg dry	MARCH	VOL
Chloroform	0. ug/kg dry	130. ug/kg dry	APRIL	VOL
Chloronitrobenzene	130000. ug/kg dry	0. ug/kg dry	JUNE	SEMILS
Chloronitrobenzene	86000. ug/kg dry	0. ug/kg dry	AUGUST	SEMILS
Chloronitrobenzene	160. ug/kg dry	0. ug/kg dry	SEPTEMBER	SEMILS
Chloronitrobenzene	200000. ug/kg dry	0. ug/kg dry	DECEMBER	SEMILS
Chloronitrobenzene	80000. ug/kg dry	0. ug/kg dry	FEBRUARY	SEMILS
Chloronitrobenzene	0. ug/kg dry	90000. ug/kg dry	APRIL	SEMILS
Chromium, Hexavalent	0. mg/kg dry	0. mg/kg dry	MAY	METAL
Chromium, Hexavalent	0. mg/kg dry	0. mg/kg dry	JUNE	METAL
Chromium, Hexavalent	0. mg/kg dry	0. mg/kg dry	JULY	METAL
Chromium, Hexavalent	0. mg/kg dry	0. mg/kg dry	AUGUST	METAL
Chromium, Hexavalent	0. mg/kg dry	0. mg/kg dry	SEPTEMBER	METAL
Chromium, Hexavalent	0. mg/kg dry	0. mg/kg dry	OCTOBER	METAL
Chromium, Hexavalent	0. mg/kg dry	0. mg/kg dry	NOVEMBER	METAL
Chromium, Hexavalent	0. mg/kg dry	630. mg/kg dry	DECEMBER	METAL
Chromium, Hexavalent	(5)	0. mg/kg dry	JANUARY	METAL
Chromium, Hexavalent	0. mg/kg dry	0. mg/kg dry	FEBRUARY	METAL
Chromium, Hexavalent	0. mg/kg dry	0. mg/kg dry	MARCH	METAL
Chromium, Hexavalent	0. mg/kg dry	0. mg/kg dry	APRIL	METAL
Chromium, Total	1320. mg/kg dry	379. mg/kg dry	MAY	METAL
Chromium, Total	1180. mg/kg dry	661. mg/kg dry	JUNE	METAL
Chromium, Total	608. mg/kg dry	195. mg/kg dry	JULY	METAL
Chromium, Total	1130. mg/kg dry	747. mg/kg dry	AUGUST	METAL
Chromium, Total	1140. mg/kg dry	1260. mg/kg dry	SEPTEMBER	METAL
Chromium, Total	445. mg/kg dry	852. mg/kg dry	OCTOBER	METAL
Chromium, Total	460. mg/kg dry	135. mg/kg dry	NOVEMBER	METAL
Chromium, Total	815. mg/kg dry	940. mg/kg dry	DECEMBER	METAL
Chromium, Total	(5)	134. mg/kg dry	JANUARY	METAL
Chromium, Total	728. mg/kg dry	898. mg/kg dry	FEBRUARY	METAL
Chromium, Total	850. mg/kg dry	598. mg/kg dry	MARCH	METAL
Chromium, Total	411. mg/kg dry	473. mg/kg dry	APRIL	METAL

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

PARAMETER	P-CHEM SLUDGE	AMERICAN BOTTOMS PRIMARY/SECONDARY	SAMPLING MONTH (1)	ANALYSIS METHOD (2)
Sampling Location No:	6	7		
Chromium, Trivalent	1320. mg/kg dry	379. mg/kg dry	MAY	METAL
Chromium, Trivalent	1180. mg/kg dry	661. mg/kg dry	JUNE	METAL
Chromium, Trivalent	608. mg/kg dry	195. mg/kg dry	JULY	METAL
Chromium, Trivalent	1130. mg/kg dry	747. mg/kg dry	AUGUST	METAL
Chromium, Trivalent	1140. mg/kg dry	1260. mg/kg dry	SEPTEMBER	METAL
Chromium, Trivalent	445. mg/kg dry	852. mg/kg dry	OCTOBER	METAL
Chromium, Trivalent	460. mg/kg dry	135. mg/kg dry	NOVEMBER	METAL
Chromium, Trivalent	815. mg/kg dry	310. mg/kg dry	DECEMBER	METAL
Chromium, Trivalent	(5)	134. mg/kg dry	JANUARY	METAL
Chromium, Trivalent	728. mg/kg dry	898. mg/kg dry	FEBRUARY	METAL
Chromium, Trivalent	850. mg/kg dry	598. mg/kg dry	MARCH	METAL
Chromium, Trivalent	411. mg/kg dry	473. mg/kg dry	APRIL	METAL
Copper	6690. mg/kg dry	567. mg/kg dry	MAY	METAL
Copper	9570. mg/kg dry	662. mg/kg dry	JUNE	METAL
Copper	5090. mg/kg dry	268. mg/kg dry	JULY	METAL
Copper	10400. mg/kg dry	1280. mg/kg dry	AUGUST	METAL
Copper	13200. mg/kg dry	1570. mg/kg dry	SEPTEMBER	METAL
Copper	9310. mg/kg dry	1610. mg/kg dry	OCTOBER	METAL
Copper	7950. mg/kg dry	290. mg/kg dry	NOVEMBER	METAL
Copper	14100. mg/kg dry	695. mg/kg dry	DECEMBER	METAL
Copper	(5)	297. mg/kg dry	JANUARY	METAL
Copper	5130. mg/kg dry	789. mg/kg dry	FEBRUARY	METAL
Copper	4220. mg/kg dry	933. mg/kg dry	MARCH	METAL
Copper	3020. mg/kg dry	420. mg/kg dry	APRIL	METAL
Cyanides	0. mg/kg dry	0. mg/kg dry	MAY	WC
Cyanides	0. mg/kg dry	0. mg/kg dry	JUNE	WC
Cyanides	0. mg/kg dry	0. mg/kg dry	JULY	WC
Cyanides	0. mg/kg dry	0. mg/kg dry	AUGUST	WC
Cyanides	0. mg/kg dry	0. mg/kg dry	SEPTEMBER	WC
Cyanides	0. mg/kg dry	0. mg/kg dry	OCTOBER	WC
Cyanides	0. mg/kg dry	0. mg/kg dry	NOVEMBER	WC
Cyanides	0. mg/kg dry	0. mg/kg dry	DECEMBER	WC
Cyanides	(5)	0. mg/kg dry	JANUARY	WC
Cyanides	0. mg/kg dry	0. mg/kg dry	FEBRUARY	WC
Cyanides	3.900 mg/kg dry	19.800 mg/kg dry	MARCH	WC
Cyanides	2.200 mg/kg dry	3.200 mg/kg dry	APRIL	WC
Di-n-Octylphthalate	0. ug/kg dry	0. ug/kg dry	MAY	SEMI
Di-n-Octylphthalate	0. ug/kg dry	1200. ug/kg dry	JUNE	SEMI
Di-n-Octylphthalate	0. ug/kg dry	0. ug/kg dry	JULY	SEMI
Di-n-Octylphthalate	7700. ug/kg dry	0. ug/kg dry	AUGUST	SEMI
Di-n-Octylphthalate	0. ug/kg dry	0. ug/kg dry	SEPTEMBER	SEMI
Di-n-Octylphthalate	0. ug/kg dry	0. ug/kg dry	OCTOBER	SEMI
Di-n-Octylphthalate	0. ug/kg dry	0. ug/kg dry	NOVEMBER	SEMI
Di-n-Octylphthalate	0. ug/kg dry	0. ug/kg dry	DECEMBER	SEMI
Di-n-Octylphthalate	(5)	0. ug/kg dry	JANUARY	SEMI
Di-n-Octylphthalate	0. ug/kg dry	0. ug/kg dry	FEBRUARY	SEMI
Di-n-Octylphthalate	0. ug/kg dry	0. ug/kg dry	MARCH	SEMI
Di-n-Octylphthalate	0. ug/kg dry	0. ug/kg dry	APRIL	SEMI

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

PARAMETER	P-CHEM SLUDGE	AMERICAN BOTTOMS PRIMARY/SECONDARY	SAMPLING MONTH (1)	ANALYSIS METHOD (2)
Sampling Location No:	6	7		
Dichlorobenzene(7)	490000. ug/kg dry	18000. ug/kg dry	JULY	VOLLS
Dichlorobenzene(7)	2300000. ug/kg dry	59000. ug/kg dry	AUGUST	VOLLS
Dichlorobenzene(7)	90000. ug/kg dry	15000. ug/kg dry	OCTOBER	VOLLS
Dichlorobenzene(7)	0. ug/kg dry	31000. ug/kg dry	OCTOBER	VOLLS
Dichlorobenzene(7)	43000. ug/kg dry	5000. ug/kg dry	NOVEMBER	VOLLS
Dichlorobenzene(7)	0. ug/kg dry	5000. ug/kg dry	NOVEMBER	VOLLS
Dichlorobenzene(7)	0. ug/kg dry	8000. ug/kg dry	FEBRUARY	VOLLS
Dichlorobenzene(7)	300000. ug/kg dry	10000. ug/kg dry	MARCH	VOLLS
Ethylbenzene	610000. ug/kg dry	1900. ug/kg dry	MAY	VOL
Ethylbenzene	710000. ug/kg dry	3400. ug/kg dry	JUNE	VOL
Ethylbenzene	160000. ug/kg dry	3400. ug/kg dry	JULY	VOL
Ethylbenzene	97000. ug/kg dry	1600. ug/kg dry	AUGUST	VOL
Ethylbenzene	15000. ug/kg dry	1000. ug/kg dry	SEPTEMBER	VOL
Ethylbenzene	43000. ug/kg dry	1200. ug/kg dry	OCTOBER	VOL
Ethylbenzene	87000. ug/kg dry	1600. ug/kg dry	NOVEMBER	VOL
Ethylbenzene	280000. ug/kg dry	2200. ug/kg dry	DECEMBER	VOL
Ethylbenzene	(5)	1300. ug/kg dry	JANUARY	VOL
Ethylbenzene	30000. ug/kg dry	7800. ug/kg dry	FEBRUARY	VOL
Ethylbenzene	96000. ug/kg dry	2400. ug/kg dry	MARCH	VOL
Ethylbenzene	93000. ug/kg dry	650. ug/kg dry	APRIL	VOL
Fluoride	12. mg/kg dry	220. mg/kg dry	MAY	WC
Fluoride	190. mg/kg dry	370. mg/kg dry	JUNE	WC
Fluoride	64. mg/kg dry	390. mg/kg dry	JULY	WC
Fluoride	67. mg/kg dry	470. mg/kg dry	AUGUST	WC
Fluoride	64. mg/kg dry	360. mg/kg dry	SEPTEMBER	WC
Fluoride	35. mg/kg dry	3100. mg/kg dry	OCTOBER	WC
Fluoride	190. mg/kg dry	860. mg/kg dry	NOVEMBER	WC
Fluoride	120. mg/kg dry	220. mg/kg dry	DECEMBER	WC
Fluoride	(5)	280. mg/kg dry	JANUARY	WC
Fluoride	170. mg/kg dry	630. mg/kg dry	FEBRUARY	WC
Fluoride	101. mg/kg dry	1130. mg/kg dry	MARCH	WC
Fluoride	78.900 mg/kg dry	884. mg/kg dry	APRIL	WC
Iron	24800. mg/kg dry	120000. mg/kg dry	MAY	METAL
Iron	18700. mg/kg dry	70800. mg/kg dry	JUNE	METAL
Iron	11600. mg/kg dry	20100. mg/kg dry	JULY	METAL
Iron	25900. mg/kg dry	70900. mg/kg dry	AUGUST	METAL
Iron	18200. mg/kg dry	67100. mg/kg dry	SEPTEMBER	METAL
Iron	14400. mg/kg dry	29400. mg/kg dry	OCTOBER	METAL
Iron	18800. mg/kg dry	11000. mg/kg dry	NOVEMBER	METAL
Iron	33600. mg/kg dry	31600. mg/kg dry	DECEMBER	METAL
Iron	(5)	9370. mg/kg dry	JANUARY	METAL
Iron	25200. mg/kg dry	47600. mg/kg dry	FEBRUARY	METAL
Iron	18800. mg/kg dry	34900. mg/kg dry	MARCH	METAL
Iron	12600. mg/kg dry	64700. mg/kg dry	APRIL	METAL

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

PARAMETER	P-CHEM SLUDGE	AMERICAN BOTTOMS PRIMARY/SECONDARY	SAMPLING MONTH (1)	ANALYSIS METHOD (2)
Sampling Location No:	6	7		
Lead	2810. mg/kg dry	280. mg/kg dry	MAY	METAL
Lead	3200. mg/kg dry	260. mg/kg dry	JUNE	METAL
Lead	2400. mg/kg dry	320. mg/kg dry	JULY	METAL
Lead	2900. mg/kg dry	480. mg/kg dry	AUGUST	METAL
Lead	3200. mg/kg dry	330. mg/kg dry	SEPTEMBER	METAL
Lead	1830. mg/kg dry	374. mg/kg dry	OCTOBER	METAL
Lead	2190. mg/kg dry	121. mg/kg dry	NOVEMBER	METAL
Lead	3840. mg/kg dry	269. mg/kg dry	DECEMBER	METAL
Lead	(5)	92.200 mg/kg dry	JANUARY	METAL
Lead	824. mg/kg dry	197. mg/kg dry	FEBRUARY	METAL
Lead	1050. mg/kg dry	185. mg/kg dry	MARCH	METAL
Lead	677. mg/kg dry	143. mg/kg dry	APRIL	METAL
Manganese	488. mg/kg dry	1900. mg/kg dry	MAY	METAL
Manganese	402. mg/kg dry	1040. mg/kg dry	JUNE	METAL
Manganese	108. mg/kg dry	373. mg/kg dry	JULY	METAL
Manganese	285. mg/kg dry	930. mg/kg dry	AUGUST	METAL
Manganese	316. mg/kg dry	928. mg/kg dry	SEPTEMBER	METAL
Manganese	298. mg/kg dry	890. mg/kg dry	OCTOBER	METAL
Manganese	261. mg/kg dry	219. mg/kg dry	NOVEMBER	METAL
Manganese	582. mg/kg dry	565. mg/kg dry	DECEMBER	METAL
Manganese	(5)	202. mg/kg dry	JANUARY	METAL
Manganese	731. mg/kg dry	1060. mg/kg dry	FEBRUARY	METAL
Manganese	790. mg/kg dry	822. mg/kg dry	MARCH	METAL
Manganese	667. mg/kg dry	1690. mg/kg dry	APRIL	METAL
Mercury	1.200 mg/kg dry	1.600 mg/kg dry	MAY	METAL
Mercury	0.340 mg/kg dry	0.110 mg/kg dry	JUNE	METAL
Mercury	0.300 mg/kg dry	0.700 mg/kg dry	JULY	METAL
Mercury	4.100 mg/kg dry	1.510 mg/kg dry	AUGUST	METAL
Mercury	6.500 mg/kg dry	0.420 mg/kg dry	SEPTEMBER	METAL
Mercury	5.700 mg/kg dry	1.900 mg/kg dry	OCTOBER	METAL
Mercury	4. mg/kg dry	1.500 mg/kg dry	NOVEMBER	METAL
Mercury	3.700 mg/kg dry	0.770 mg/kg dry	DECEMBER	METAL
Mercury	(5)	0.870 mg/kg dry	JANUARY	METAL
Mercury	2.300 mg/kg dry	1.100 mg/kg dry	FEBRUARY	METAL
Mercury	2.700 mg/kg dry	0. mg/kg dry	MARCH	METAL
Mercury	1.500 mg/kg dry	0. mg/kg dry	APRIL	METAL
Methylene Chloride	1300. ug/kg dry	7200. ug/kg dry	MAY	VOL
Methylene Chloride	0. ug/kg dry	12000. ug/kg dry	JUNE	VOL
Methylene Chloride	140000. ug/kg dry	1200. ug/kg dry	JULY	VOL
Methylene Chloride	0. ug/kg dry	0. ug/kg dry	AUGUST	VOL
Methylene Chloride	0. ug/kg dry	37. ug/kg dry	SEPTEMBER	VOL
Methylene Chloride	7400. ug/kg dry	260. ug/kg dry	OCTOBER	VOL
Methylene Chloride	40000. ug/kg dry	520. ug/kg dry	NOVEMBER	VOL
Methylene Chloride	0. ug/kg dry	0. ug/kg dry	DECEMBER	VOL
Methylene Chloride	(5)	0. ug/kg dry	JANUARY	VOL
Methylene Chloride	130000. ug/kg dry	480. ug/kg dry	FEBRUARY	VOL
Methylene Chloride	75000. ug/kg dry	260. ug/kg dry	MARCH	VOL
Methylene Chloride	0. ug/kg dry	200. ug/kg dry	APRIL	VOL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

PARAMETER	P-CHEM SLUDGE	AMERICAN BOTTOMS PRIMARY/SECONDARY	SAMPLING MONTH (1)	ANALYSIS METHOD (2)
Sampling Location No:	6	7		
Naphthalene	5300. ug/kg dry	0. ug/kg dry	MAY	SEMI
Naphthalene	15000. ug/kg dry	0. ug/kg dry	JUNE	SEMI
Naphthalene	7600. ug/kg dry	0. ug/kg dry	JULY	SEMI
Naphthalene	4100. ug/kg dry	0. ug/kg dry	AUGUST	SEMI
Naphthalene	35. ug/kg dry	0. ug/kg dry	SEPTEMBER	SEMI
Naphthalene	8400. ug/kg dry	0. ug/kg dry	OCTOBER	SEMI
Naphthalene	7500. ug/kg dry	0. ug/kg dry	NOVEMBER	VOLLS(3)
Naphthalene	35000. ug/kg dry	0. ug/kg dry	NOVEMBER	SEMI
Naphthalene	9300. ug/kg dry	0. ug/kg dry	DECEMBER	SEMI
Naphthalene	(5)	0. ug/kg dry	JANUARY	SEMI
Naphthalene	5900. ug/kg dry	0. ug/kg dry	FEBRUARY	SEMI
Naphthalene	23000. ug/kg dry	0. ug/kg dry	MARCH	SEMI
Naphthalene	0. ug/kg dry	6700. ug/kg dry	APRIL	SEMI
Nickel	1630. mg/kg dry	291. mg/kg dry	MAY	METAL
Nickel	2496. mg/kg dry	610. mg/kg dry	JUNE	METAL
Nickel	1400. mg/kg dry	145. mg/kg dry	JULY	METAL
Nickel	4040. mg/kg dry	726. mg/kg dry	AUGUST	METAL
Nickel	1660. mg/kg dry	490. mg/kg dry	SEPTEMBER	METAL
Nickel	1360. mg/kg dry	676. mg/kg dry	OCTOBER	METAL
Nickel	1720. mg/kg dry	176. mg/kg dry	NOVEMBER	METAL
Nickel	4020. mg/kg dry	554. mg/kg dry	DECEMBER	METAL
Nickel	(5)	281. mg/kg dry	JANUARY	METAL
Nickel	24500. mg/kg dry	710. mg/kg dry	FEBRUARY	METAL
Nickel	3620. mg/kg dry	350. mg/kg dry	MARCH	METAL
Nickel	1500. mg/kg dry	182. mg/kg dry	APRIL	METAL
Oil and Grease	71000. mg/kg dry	22000. mg/kg dry	MAY	WC
Oil and Grease	150000. mg/kg dry	32000. mg/kg dry	JUNE	WC
Oil and Grease	330000. mg/kg dry	150000. mg/kg dry	JULY	WC
Oil and Grease	280000. mg/kg dry	170000. mg/kg dry	AUGUST	WC
Oil and Grease	220000. mg/kg dry	110000. mg/kg dry	SEPTEMBER	WC
Oil and Grease	15000. mg/kg dry	130000. mg/kg dry	OCTOBER	WC
Oil and Grease	410000. mg/kg dry	140000. mg/kg dry	NOVEMBER	WC
Oil and Grease	230000. mg/kg dry	120000. mg/kg dry	DECEMBER	WC
Oil and Grease	(5)	45000. mg/kg dry	JANUARY	WC
Oil and Grease	180000. mg/kg dry	120000. mg/kg dry	FEBRUARY	WC
Oil and Grease	220000. mg/kg dry	428000. mg/kg dry	MARCH	WC
Oil and Grease	270000. mg/kg dry	64000. mg/kg dry	APRIL	WC

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

PARAMETER	P-CHEM SLUDGE	AMERICAN BOTTOMS PRIMARY/SECONDARY	SAMPLING MONTH (1)	ANALYSIS METHOD (2)
Sampling Location No:	6	7		
pH	9.800 S.U.	7.400 S.U.	MAY	WC
pH	11.390 S.U.	7.320 S.U.	JUNE	WC
pH	10.510 S.U.	7.020 S.U.	JULY	WC
pH	11.010 S.U.	7.570 S.U.	AUGUST	WC
pH	11.600 S.U.	7.300 S.U.	SEPTEMBER	WC
pH	12.660 S.U.	6.890 S.U.	OCTOBER	WC
pH	12.730 S.U.	8.730 S.U.	NOVEMBER	WC
pH	12.430 S.U.	6.670 S.U.	DECEMBER	WC
pH	(5)	7.680 S.U.	JANUARY	WC
pH	12.800 S.U.	7.340 S.U.	FEBRUARY	WC
pH	12.700 S.U.	7.100 S.U.	MARCH	WC
pH	11.500 S.U.	8.900 S.U.	APRIL	WC
Phenol	0. ug/kg dry	0. ug/kg dry	MAY	SEMI
Phenol	0. ug/kg dry	940. ug/kg dry	JUNE	SEMI
Phenol	0. ug/kg dry	0. ug/kg dry	JULY	SEMI
Phenol	0. ug/kg dry	0. ug/kg dry	AUGUST	SEMI
Phenol	0. ug/kg dry	0. ug/kg dry	SEPTEMBER	SEMI
Phenol	0. ug/kg dry	0. ug/kg dry	OCTOBER	SEMI
Phenol	0. ug/kg dry	0. ug/kg dry	NOVEMBER	SEMI
Phenol	7300. ug/kg dry	1900. ug/kg dry	DECEMBER	SEMI
Phenol	(5)	0. ug/kg dry	JANUARY	SEMI
Phenol	0. ug/kg dry	0. ug/kg dry	FEBRUARY	SEMI
Phenol	0. ug/kg dry	11000. ug/kg dry	MARCH	SEMI
Phenol	0. ug/kg dry	0. ug/kg dry	APRIL	SEMI
Phenolics	45. mg/kg dry	0. mg/kg dry	MAY	WC
Phenolics	39. mg/kg dry	0. mg/kg dry	JUNE	WC
Phenolics	38. mg/kg dry	36. mg/kg dry	JULY	WC
Phenolics	28. mg/kg dry	0. mg/kg dry	AUGUST	WC
Phenolics	42. mg/kg dry	32. mg/kg dry	SEPTEMBER	WC
Phenolics	7.200 mg/kg dry	19. mg/kg dry	OCTOBER	WC
Phenolics	19. mg/kg dry	20. mg/kg dry	NOVEMBER	WC
Phenolics	15. mg/kg dry	6. mg/kg dry	DECEMBER	WC
Phenolics	(5)	12. mg/kg dry	JANUARY	WC
Phenolics	22. mg/kg dry	0. mg/kg dry	FEBRUARY	WC
Phenolics	38.800 mg/kg dry	125. mg/kg dry	MARCH	WC
Phenolics	44.700 mg/kg dry	23.200 mg/kg dry	APRIL	WC
Selenium	121. mg/kg dry	0. mg/kg dry	MAY	METAL
Selenium	38.700 mg/kg dry	0. mg/kg dry	JUNE	METAL
Selenium	12.500 mg/kg dry	0. mg/kg dry	JULY	METAL
Selenium	14.300 mg/kg dry	0. mg/kg dry	AUGUST	METAL
Selenium	0. mg/kg dry	0. mg/kg dry	SEPTEMBER	METAL
Selenium	6.680 mg/kg dry	2.670 mg/kg dry	OCTOBER	METAL
Selenium	11. mg/kg dry	0. mg/kg dry	NOVEMBER	METAL
Selenium	48. mg/kg dry	8.700 mg/kg dry	DECEMBER	METAL
Selenium	(5)	0.980 mg/kg dry	JANUARY	METAL
Selenium	0. mg/kg dry	0. mg/kg dry	FEBRUARY	METAL
Selenium	0. mg/kg dry	0. mg/kg dry	MARCH	METAL
Selenium	4.100 mg/kg dry	0. mg/kg dry	APRIL	METAL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

PARAMETER	P-CHEM SLUDGE	AMERICAN BOTTOMS PRIMARY/SECONDARY	SAMPLING MONTH (1)	ANALYSIS METHOD (2)
Sampling Location No:	6	7		
Silver	20.800 mg/kg dry	0. mg/kg dry	MAY	METAL
Silver	58.900 mg/kg dry	9.540 mg/kg dry	JUNE	METAL
Silver	13.500 mg/kg dry	0. mg/kg dry	JULY	METAL
Silver	55.600 mg/kg dry	0. mg/kg dry	AUGUST	METAL
Silver	29.900 mg/kg dry	0. mg/kg dry	SEPTEMBER	METAL
Silver	13.600 mg/kg dry	0. mg/kg dry	OCTOBER	METAL
Silver	22.800 mg/kg dry	0. mg/kg dry	NOVEMBER	METAL
Silver	0. mg/kg dry	0. mg/kg dry	DECEMBER	METAL
Silver	(5)	0. mg/kg dry	JANUARY	METAL
Silver	13.400 mg/kg dry	0. mg/kg dry	FEBRUARY	METAL
Silver	44.900 mg/kg dry	0. mg/kg dry	MARCH	METAL
Silver	14.400 mg/kg dry	0. mg/kg dry	APRIL	METAL
Solids, Total	26.700 %	19. %	MAY	WC
Solids, Total	23.700 %	18.100 %	JUNE	WC
Solids, Total	28.500 %	16.900 %	JULY	WC
Solids, Total	30.100 %	16. %	AUGUST	WC
Solids, Total	26.500 %	17.300 %	SEPTEMBER	WC
Solids, Total	34.600 %	14.500 %	OCTOBER	WC
Solids, Total	27.700 %	14.600 %	NOVEMBER	WC
Solids, Total	26.300 %	13.900 %	DECEMBER	WC
Solids, Total	(5)	17. %	JANUARY	WC
Solids, Total	22.400 %	18.500 %	FEBRUARY	WC
Solids, Total	26. %	17. %	MARCH	WC
Solids, Total	30.500 %	19.100 %	APRIL	WC
Solids, Volatile	46.200 %	52. %	MAY	WC
Solids, Volatile	57.800 %	50.400 %	JUNE	WC
Solids, Volatile	49.100 %	50. %	JULY	WC
Solids, Volatile	41.700 %	54.600 %	AUGUST	WC
Solids, Volatile	39.400 %	54. %	SEPTEMBER	WC
Solids, Volatile	7.700 %	62.300 %	OCTOBER	WC
Solids, Volatile	41.200 %	55.600 %	NOVEMBER	WC
Solids, Volatile	37.400 %	62.400 %	DECEMBER	WC
Solids, Volatile	(5)	56.100 %	JANUARY	WC
Solids, Volatile	30.100 %	52.700 %	FEBRUARY	WC
Solids, Volatile	30. %	57. %	MARCH	WC
Solids, Volatile	36.900 %	30.100 %	APRIL	WC
Sulfates	3900. mg/kg dry	0. mg/kg dry	MAY	WC
Sulfates	2000. mg/kg dry	0. mg/kg dry	JUNE	WC
Sulfates	1500. mg/kg dry	0. mg/kg dry	JULY	WC
Sulfates	1800. mg/kg dry	0. mg/kg dry	AUGUST	WC
Sulfates	1400. mg/kg dry	250. mg/kg dry	SEPTEMBER	WC
Sulfates	0. mg/kg dry	390. mg/kg dry	OCTOBER	WC
Sulfates	570. mg/kg dry	0. mg/kg dry	NOVEMBER	WC
Sulfates	990. mg/kg dry	0. mg/kg dry	DECEMBER	WC
Sulfates	(5)	0. mg/kg dry	JANUARY	WC
Sulfates	220. mg/kg dry	690. mg/kg dry	FEBRUARY	WC
Sulfates	0. mg/kg dry	474. mg/kg dry	MARCH	WC
Sulfates	165. mg/kg dry	3750. mg/kg dry	APRIL	WC

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

PARAMETER	P-CHEM SLUDGE	AMERICAN BOTTOMS PRIMARY/SECONDARY	SAMPLING MONTH (1)	ANALYSIS METHOD (2)
Sampling Location No:	6	7		
TOC(6)	255000. mg/kg dry	170000. mg/kg dry	MAY	WC
TOC(6)	275000. mg/kg dry	150000. mg/kg dry	JUNE	WC
TOC(6)	330000. mg/kg dry	165000. mg/kg dry	JULY	WC
TOC(6)	275000. mg/kg dry	240000. mg/kg dry	AUGUST	WC
TOC(6)	115000. mg/kg dry	435000. mg/kg dry	SEPTEMBER	WC
TOC(6)	130000. mg/kg dry	685000. mg/kg dry	OCTOBER	WC
TOC(6)	160000. mg/kg dry	125000. mg/kg dry	NOVEMBER	WC
TOC(6)	184000. mg/kg dry	38000. mg/kg dry	DECEMBER	WC
TOC(6)	(5)	140000. mg/kg dry	JANUARY	WC
TOC(6)	155000. mg/kg dry	160000. mg/kg dry	FEBRUARY	WC
TOC	154000. mg/kg dry	27900. mg/kg dry	MARCH	WC
TOC	197000. mg/kg dry	188000. mg/kg dry	APRIL	WC
Toluene	87000. ug/kg dry	0. ug/kg dry	MAY	VOL
Toluene	78000. ug/kg dry	4900. ug/kg dry	JUNE	VOL
Toluene	21000. ug/kg dry	1700. ug/kg dry	JULY	VOL
Toluene	0. ug/kg dry	680. ug/kg dry	AUGUST	VOL
Toluene	0. ug/kg dry	130. ug/kg dry	SEPTEMBER	VOL
Toluene	6400. ug/kg dry	550. ug/kg dry	OCTOBER	VOL
Toluene	8800. ug/kg dry	580. ug/kg dry	NOVEMBER	VOL
Toluene	21000. ug/kg dry	200. ug/kg dry	DECEMBER	VOL
Toluene	(5)	0. ug/kg dry	JANUARY	VOL
Toluene	0. ug/kg dry	680. ug/kg dry	FEBRUARY	VOL
Toluene	5000. ug/kg dry	1700. ug/kg dry	MARCH	VOL
Toluene	0. ug/kg dry	0. ug/kg dry	APRIL	VOL
Xylene	3000000. ug/kg dry	230000. ug/kg dry	MAY	VOL
Xylene	5000000. ug/kg dry	29000. ug/kg dry	JUNE	VOL
Xylene	730000. ug/kg dry	19000. ug/kg dry	JULY	VOL
Xylene	460000. ug/kg dry	12000. ug/kg dry	AUGUST	VOL
Xylene	74000. ug/kg dry	4600. ug/kg dry	SEPTEMBER	VOL
Xylene	200000. ug/kg dry	13000. ug/kg dry	OCTOBER	VOL
Xylene	410000. ug/kg dry	8700. ug/kg dry	NOVEMBER	VOL
Xylene	1000000. ug/kg dry	10000. ug/kg dry	DECEMBER	VOL
Xylene	(5)	13000. ug/kg dry	JANUARY	VOL
Xylene	230000. ug/kg dry	33000. ug/kg dry	FEBRUARY	VOL
Xylene	450000. ug/kg dry	13000. ug/kg dry	MARCH	VOL
Xylene	440000. ug/kg dry	3900. ug/kg dry	APRIL	VOL
Zinc	18400. mg/kg dry	1310. mg/kg dry	MAY	METAL
Zinc	20900. mg/kg dry	2640. mg/kg dry	JUNE	METAL
Zinc	8510. mg/kg dry	684. mg/kg dry	JULY	METAL
Zinc	17500. mg/kg dry	3004. mg/kg dry	AUGUST	METAL
Zinc	18400. mg/kg dry	2690. mg/kg dry	SEPTEMBER	METAL
Zinc	11400. mg/kg dry	4010. mg/kg dry	OCTOBER	METAL
Zinc	12700. mg/kg dry	631. mg/kg dry	NOVEMBER	METAL
Zinc	24800. mg/kg dry	1470. mg/kg dry	DECEMBER	METAL
Zinc	(5)	1720. mg/kg dry	JANUARY	METAL
Zinc	24500. mg/kg dry	2750. mg/kg dry	FEBRUARY	METAL
Zinc	14900. mg/kg dry	1410. mg/kg dry	MARCH	METAL
Zinc	9550. mg/kg dry	648. mg/kg dry	APRIL	METAL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-2
RESULTS OF GULF COAST SAMPLING
PARAMETERS ANALYZED AND DETECTED IN SLUDGE SAMPLES

(ALL VALUES REPORTED ARE ON A DRY BASIS)

Notes:

(1) Sampling occurred once per month May 1988 through and including April 1989.
(2) Analysis methods are identified as follows:
  - WC Wet chemistry analysis
  - METAL Metals analysis
  - PEST GCMS scan for pesticides
  - VOL GCMS scan for volatile organics
  - VOLLS Volatile library serarch to tentatively identify unrecognized peaks

(3) Data not used in average calculations due to duplicate, higher confidence data for same month.
(4) Data used in conjunction with remaining scan data for average calculations.
(5) No sample was obtained for hte P-Chem sludge filter cake during the January 1989 sampling event.
(6) Results reported for TOC in May through February are the average of duplicate samples. No duplicate results were reported in March and April.
(7) Isomer unspecified. Refer to isomer of interest for more reliable data.

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APPENDIX A-3

RESULTS OF GULF COAST SAMPLING
EXTRACTION PROCEDURE TOXICITY DATA

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-3

RESULTS OF GULF COAST SAMPLING

EXTRACTION PROCEDURE TOXICITY DATA

PARAMETER	P-CHEM SLUDGE FILTER CAKE	AMERICAN BOTTOMS PRIMARY/SECONDARY SLUDGE FILTER CAKE	UNITS	MONTH
Arsenic	< 0.5 (u)	< 0.5 (u)	mg/l	MAY
Arsenic	< 0.5 (u)	< 0.5 (u)	mg/l	JUNE
Arsenic	< 0.5 (u)	< 0.05 (u)	mg/l	JULY
Arsenic	< 0.5 (u)	< 0.5 (u)	mg/l	AUGUST
Arsenic	< 0.5 (u)	< 0.5 (u)	mg/l	SEPTEMBER
Arsenic	< 0.5 (u)	< 0.5 (u)	mg/l	OCTOBER
Arsenic	< 0.5 (u)	< 0.5 (u)	mg/l	NOVEMBER
Arsenic	< 0.5 (u)	< 0.5 (u)	mg/l	DECEMBER
Arsenic	NO SAMPLE	< 0.5 (u)	mg/l	JANUARY
Arsenic	< 0.5 (u)	< 0.5 (u)	mg/l	FEBRUARY
Arsenic	0.038	0.032	mg/l	MARCH
Arsenic	< 0.02 (u)	< 0.02 (u)	mg/l	APRIL
Barium	< 10 (u)	< 10 (u)	mg/l	MAY
Barium	< 10 (u)	< 10 (u)	mg/l	JUNE
Barium	< 10 (u)	< 10 (u)	mg/l	JULY
Barium	< 10 (u)	< 10 (u)	mg/l	AUGUST
Barium	< 10 (u)	< 10 (u)	mg/l	SEPTEMBER
Barium	< 10 (u)	< 10 (u)	mg/l	OCTOBER
Barium	< 10 (u)	< 10 (u)	mg/l	NOVEMBER
Barium	< 10 (u)	< 10 (u)	mg/l	DECEMBER
Barium	NO SAMPLE	< 10 (u)	mg/l	JANUARY
Barium	< 10 (u)	< 10 (u)	mg/l	FEBRUARY
Barium	8.4	< 1 (u)	mg/l	MARCH
Barium	1.4	< 1 (u)	mg/l	APRIL
Cadmium	2.7	< 0.1 (u)	mg/l	MAY
Cadmium	2	< 0.1 (u)	mg/l	JUNE
Cadmium	2.1	< 0.1 (u)	mg/l	JULY
Cadmium	2.9	< 0.1 (u)	mg/l	AUGUST
Cadmium	2.6	< 0.1 (u)	mg/l	SEPTEMBER
Cadmium	< 0.1 (u)	< 0.1 (u)	mg/l	OCTOBER
Cadmium	3.1	< 0.1 (u)	mg/l	NOVEMBER
Cadmium	2.2	< 0.1 (u)	mg/l	DECEMBER
Cadmium	NO SAMPLE	< 0.1 (u)	mg/l	JANUARY
Cadmium	2.4	< 0.1 (u)	mg/l	FEBRUARY
Cadmium	1.8	0.044 (u)	mg/l	MARCH
Cadmium	1.2	0.067 (u)	mg/l	APRIL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-3
RESULTS OF GULF COAST SAMPLING
EXTRACTION PROCEDURE TOXICITY DATA

PARAMETER	P-CHEM SLUDGE FILTER CAKE	AMERICAN BOTTOMS PRIMARY/SECONDARY SLUDGE FILTER CAKE	UNITS	MONTH
Chromium	< 0.5 (u)	< 0.5 (u)	mg/l	MAY
Chromium	< 0.5 (u)	< 0.5 (u)	mg/l	JUNE
Chromium	0.85	< 0.5 (u)	mg/l	JULY
Chromium	< 0.5 (u)	< 0.5 (u)	mg/l	AUGUST
Chromium	< 0.5 (u)	< 0.5 (u)	mg/l	SEPTEMBER
Chromium	< 0.5 (u)	< 0.5 (u)	mg/l	OCTOBER
Chromium	< 0.5 (u)	< 0.5 (u)	mg/l	NOVEMBER
Chromium	< 0.5 (u)	< 0.5 (u)	mg/l	DECEMBER
Chromium	NO SAMPLE	< 0.5 (u)	mg/l	JANUARY
Chromium	< 0.5 (u)	< 0.5 (u)	mg/l	FEBRUARY
Chromium	0.089	0.026	mg/l	MARCH
Chromium	0.087	0.068	mg/l	APRIL
Lead	< 0.5 (u)	< 0.5 (u)	mg/l	MAY
Lead	0.56	< 0.5 (u)	mg/l	JUNE
Lead	1.2	< 0.5 (u)	mg/l	JULY
Lead	1.2	< 0.5 (u)	mg/l	AUGUST
Lead	0.54	< 0.5 (u)	mg/l	SEPTEMBER
Lead	2.8	< 0.5 (u)	mg/l	OCTOBER
Lead	0.64	< 0.5 (u)	mg/l	NOVEMBER
Lead	0.98	< 0.5 (u)	mg/l	DECEMBER
Lead	NO SAMPLE	3	mg/l	JANUARY
Lead	< 0.5 (u)	< 0.5 (u)	mg/l	FEBRUARY
Lead	0.39	< 0.05 (u)	mg/l	MARCH
Lead	0.41	0.099	mg/l	APRIL
Mercury	< 0.075 (u)	< 0.105 (u)	mg/l	MAY
Mercury	< 0.02 (u)	< 0.02 (u)	mg/l	JUNE
Mercury	< 0.02 (u)	< 0.02 (u)	mg/l	JULY
Mercury	< 0.02 (u)	< 0.02 (u)	mg/l	AUGUST
Mercury	0.047	< 0.02 (u)	mg/l	SEPTEMBER
Mercury	< 0.02 (u)	< 0.02 (u)	mg/l	OCTOBER
Mercury	< 0.02 (u)	< 0.02 (u)	mg/l	NOVEMBER
Mercury	< 0.02 (u)	< 0.02 (u)	mg/l	DECEMBER
Mercury	NO SAMPLE	< 0.02 (u)	mg/l	JANUARY
Mercury	< 0.02 (u)	< 0.02 (u)	mg/l	FEBRUARY
Mercury	0.006	< 0.004 (u)	mg/l	MARCH
Mercury	< 0.004 (u)	< 0.004 (u)	mg/l	APRIL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-3
RESULTS OF GULF COAST SAMPLING
EXTRACTION PROCEDURE TOXICITY DATA

PARAMETER	P-CHEM SLUDGE FILTER CAKE	AMERICAN BOTTOMS PRIMARY/SECONDARY SLUDGE FILTER CAKE	UNITS	MONTH
Selenium	< 0.1 (u)	< 0.1 (u)	mg/l	MAY
Selenium	< 0.1 (u)	< 0.1 (u)	mg/l	JUNE
Selenium	< 0.1 (u)	< 0.1 (u)	mg/l	JULY
Selenium	< 0.1 (u)	< 0.1 (u)	mg/l	AUGUST
Selenium	< 0.1 (u)	< 0.1 (u)	mg/l	SEPTEMBER
Selenium	< 0.1 (u)	< 0.1 (u)	mg/l	OCTOBER
Selenium	< 0.1 (u)	< 0.1 (u)	mg/l	NOVEMBER
Selenium	< 0.1 (u)	< 0.1 (u)	mg/l	DECEMBER
Selenium	NO SAMPLE	< 0.1 (u)	mg/l	JANUARY
Selenium	< 0.1 (u)	< 0.1 (u)	mg/l	FEBRUARY
Selenium	< 0.01 (u)	< 0.01 (u)	mg/l	MARCH
Selenium	< 0.01 (u)	< 0.01 (u)	mg/l	APRIL
Silver	< 0.5 (u)	< 0.5 (u)	mg/l	MAY
Silver	< 0.5 (u)	< 0.5 (u)	mg/l	JUNE
Silver	< 0.5 (u)	< 0.5 (u)	mg/l	JULY
Silver	< 0.5 (u)	< 0.5 (u)	mg/l	AUGUST
Silver	< 0.5 (u)	< 0.5 (u)	mg/l	SEPTEMBER
Silver	< 0.5 (u)	< 0.5 (u)	mg/l	OCTOBER
Silver	< 0.5 (u)	< 0.5 (u)	mg/l	NOVEMBER
Silver	< 0.5 (u)	< 0.5 (u)	mg/l	DECEMBER
Silver	NO SAMPLE	< 0.5 (u)	mg/l	JANUARY
Silver	< 0.5 (u)	< 0.5 (u)	mg/l	FEBRUARY
Silver	0.2	0.023	mg/l	MARCH
Silver	0.074	0.03	mg/l	APRIL

(u) Parameter undetected at this location during month indicated.

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APPENDIX A-4

SUMMARY OF PARAMETERS
ELIMINATED FROM EVALUATION
FOR THE DEVELOPMENT OF LOCAL LIMITS

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX A-4

SUMMARY OF PARAMETERS ELIMINATED FROM EVALUATION FOR THE DEVELOPMENT OF LOCAL LIMITS

Acenaphthalene (2b)
Acenaphthylene (2a)
Acridinamine (2b)
Acrolein (2cN)
Acrylonitrile (2a)
Aldrin (3b)
Alkyl Substituted Benzene (1)
alpha-BHC (2b)
alpha-Chlordane (2b)
alpha-Pinene (2cN)
Altrazineze (2b)
Aniline + unknown (1)
Anthracene (2b)
Aroclor 1016 (2a)
Aroclor 1221 (2a)
Aroclor 1232 (2a)
Aroclor 1242 (2a)
Aroclor 1248 (2a)
Aroclor 1254 (2a)
Aroclor 1260 (2a)
Benzeneacetic Acid (2b)
Benzenediamine (2cN)
Benzenediol (2cN)
Benzenepropanoic Acid (2cN)
Benzidine (2a)
Benzo(a)anthracene (2a)
Benzo(a)pyrene (2a)
Benzo(b)fluoranthene (2a)
Benzo(g,h,i)perylene (2a)
Benzo(k)fluoranthene (2a)
Benzoic Acid (3a)
Benzyl Alcohol (2dN)
beta-BHC (2cY)
Bis(-2-Chloroethoxy)methane (2a)
Bis(-2-Chloroethyl)ether (2a)
Bis(-2-Chloroisopropyl)ether (2a)
Bis(chloromethyl)ether (2a)
Bromodichloromethane (2b)
Bromoform (2a)
Bromomethane (2a)
4-Bromophenyl-phenylether (2a)
Butoxyethanol (2b)
Butoxyethanol Phosphate (2cN)
Butyl Ester Acetic Acid (2cN)
C3-Benzene (1)
C4-Benzene (1)
Caffeine (2b)
Camphene (2cN)
Carbon Disulfide (2b)
Carbon Tetrachloride (2a)
Chloroethane (2a)
2-Chloroethyl Vinyl Ether (2a)
Chloromethane (2a)
4-Chloro-3-methylphenol (2a)
2-Chloronaphthalene (2a)
4-Chlorophenyl-phenylether (2a)
Chrysene (2a)
Cineole (3a)
cis-1,3-Dichloropropene (2a)
4'4'-DDD (2dY)
4'4'-DDT (3b)
Cyclohexadiene-Dione (2cY)
Decane (2cY)
delta-BHC (2b)
Dibenz(a,h)anthracene (2a)
Dibenzofuran (2b)
Dibromochloromethane (2a)
3,3'-Dichlorobenzidine (2a)
Dichlorodifluoromethane (2a)
1,1-Dichloroethane (2cN)
1,2-Dichloroethane (2dN)
1,2-Dichloroethene (2a)
1,1-Dichloroethene (2a)
1,2-Dichloropropane (2a)
Dichloropropene (3a)
Dieldrin (2b)
Diethylbenzene (2b)
Diethylphthalate (2b)
Dimethyl Undecane (2b)
Dimethyl-Diazine (2cN)

Dimethyldisulfide (2dN)
2,4-Dimethylphenol (2dN)
Dimethylphthalate (2a)
Dimethyltrisulfide (1)
Dimpylate (2b)
4,6-Dinitro-2-methylphenol (2a)
2,4-Dinitrophenol (2dN)
2,4-Dinitrotoluene (2a)
2,6-Dinitrotoluene (2a)
Dioxin (2a)
1,2-Diphenylhydrazine (2a)
Dodecanoic Acid (2dY)
Endosulfan I (2a)
Endosulfan II (2b)
Endosulfan Sulfate (2a)
Endrin (2dY)
Endrin Ketone (2a)
Ethanol (3a)
3-Ethylhexane (2cN)
2-Ethylhexanol (2cN)
2-Ethyl-1-Hexanol (2cN)
Ethylmethylbenzene (2dY)
Fluoranthene (2a)
Fluorene (2b)
gamma-BHC (Lindane) (2dY)
gamma-Chlordane (3b)
Heptachlor (2dY)
Heptachlor Epoxide (2a)
Heptylnonylbenzene (3a)
Hexadecanoic Acid (3a)
Hexachlorobenzene (2a)
Hexachlorobutadiene (2a)
Hexachlorocyclopentadiene (2a)
Hexachloroethane (2a)
2-Hexanol (2cN)
2-Hexanone (2a)
Indeno(1,2,3-cd)pyrene (2a)
Isophorone (2a)
Metetilachlor (1)
Methanethiol (2cN)
Methoxychlor (2a)
Methylbenzenamine (2cN)
2-Methylheptane (2cY)
3-Methylheptane (2cN)
Methylhexanone (2cN)
5-Methyl-2-Hexanone (3a)
1-Methyl-4-(1-Methylethyl)-
7-Oxabicyclo[2,2,1]heptane (5)
2-Methylnaphthalene (3b)
2-Methylphenol (2b)
4-Methylphenol (3a)
2-Methyl-2-Propanethiol (2b)
Methylpropanol (2b)
2-Methyl-2-Propanol (4N)
2-Methylpropyl ester
acetic acid (2b)
3-Nitroaniline (2a)
N-Nitroso-Di-n-propylamine (2a)
N-Nitrosodimethylamine (2a)
N-Nitrososdiphenylamine (3a)
Nitro-Phenyl-Benzenamine (2cN)
Nonane (2b)
Octadecanoic Acid (3a)
Octane (2cN)
PCB's, Total (2a)
Pentachlorophenol (2b)
Pentadecanoic Acid (2cN)
2-Pentanone (2cN)
Phenanthrene (2dY)
Phenyl-Bicyclohexyl (1)
Phenyl-Formamide (3a)
Phosphinic Acid, Ester (2cN)
Phthalic Anhydride (4N)
2-Propanol (3a)
Propylbenzene (3b)
2-Propylfuran (2b)
Propynylbenzene (2b)
Pyrene (2a)
Styrene (3a)
Substituted Acid (1)
Substituted Benzamide (1)
Substituted Benzamine + unknown (1)
Substituted Benzamine (1)
Substituted Benzene + unknown (1)
Substituted Benzene (1)
Substituted Benzenediamine (1)
Substituted Bicycloheptanol (1)
Substituted Bicyclohexyl (1)
Substituted C10H16O (1)
Substituted Diazene (1)
Substituted Ethanol Phosphate (1)
Substituted Ethanol Acetate (1)
Substituted Ethanol (1)
Substituted Ethanone (1)
Substituted Formamide (1)
Substituted Glycine (1)
Substituted Hexanone (1)
1,1,2,2-Tetrachloroethane (2a)
Tetrachloroethene (3a)
Tetradecanoic Acid (3b)
Tetrahydrofuran (3a)
Thiobismethane (2cN)
Toxaphene (2a)
trans-1,3-Dichloropropene (2a)

1,2,4-Trichlorobenzene (3b)
1,1,2-Trichloroethane (2a)
Trichlorofluoromethane (2a)
2,4,5-Trichlorophenol (2a)
2,4,6-Trichlorophenol (2cY)
Trimethylbenzene (2dY)
Trimethylcyclohexane (2cN)
Undecane (2cN)
Unknown + PPL (1)
Unknown Acid Ester (1)
Unknown Acid + Substituted Benzene (1)
Unknown Acid (1)
Unknown Alkylated Benzene (1)
Unknown Aromatic Hydrocarbon (1)
Unknown Benzene C_8H_{10} (1)
Unknown Benzene $C_6H_4Cl_2$ (1)
Unknown Biphenyl-Diamine (1)
Unknown $C_5H_{10}O$ (1)
Unknown $C_6H_8N_2$ (1)
Unknown $C_7H_{14}O$ (1)
Unknown C_8H_7N (1)
Unknown C_9H_{12} (1)
Unknown C_9H_{20} (1)
Unknown $C_{10}H_{14}$ (1)
Unknown $C_{10}H_{18}$ (1)
Unknown $C_{10}H_{18}O$ (1)
Unknown $C_{10}H_8$ (1)
Unknown $C_{11}H_{24}$ (1)
Unknown $C_{11}H_{26}$ (1)
Unknown $C_{12}H_{26}$ (1)
Unknown $C_{18}H_{14}$ (1)
Unknown Ethanol Acetate (1)
Unknown Hydrocarbon $C_{10}H_{16}$ (1)
Unknown Hydrocarbon + Unknown (1)
Unknown Hydrocarbon + PPL (1)
Unknown Hydrocarbon + ISTD (1)
Unknown Hydrocarbon + HSL (1)
Unknown Hydrocarbon (1)
Unknown Sterol (1)
Unknown Substituted Acid (1)
Vinyl Acetate (2a)
Vinyl Chloride (2a)

Notes:

(1) Chemical class identification only: This notation was used to designate those parameters which were identified solely in terms of a broad chemical classification. This category was made up of those parameters identified as "unknown" or "substituted," e.g., unknown alkylated benzene or substituted ethanol, and those having an unknown or improbable chemical structure or name, and for which no water quality or health criteria were available. These parameters were deemed to have insufficient data for use in evaluating the need for local industrial limits.

(2a) Not detected at any location during any sampling events. These parameters were analyzed each month but were not detected at any sampling location at any time and, accordingly, these parameters were dismissed from further consideration.

(2b) Detected only at or near MDL and sporadically at any location during any sampling events. These parameters were detected only at or near MDL at any sampling location during any sampling events. The results for these compounds were indeterminate, hence the data could not be used for further evaluation.

(2c) Not detected in plant influents and final effluent but detected in one or more other locations at some time. These parameters were not detected in sampling of either plant influent or final effluent but were detected in one or more other sampling locations during the fate and effects sampling program. These parameters were then further identified as bioconcentratable substances (2cY) and nonbioconcentratable substances (2cN) in accordance with the procedures discussed in Section III.A.2. Parameters identified as nonbioconcentratable substances were deemed to have insufficient data for use in evaluating the need for local industrial limits and were dismissed from further consideration. For parameters identified as bioconcentratable substances, it was determined that although undetected in the influents and effluent, the presence of these parameters in other sampling locations indicated the potential for them to be present below the detection limit in the influents or effluent, and could thereby bioaccumulate in the receiving waters if they were bioconcentratable substances. As discussed more fully in Section III.A.2, further evaluation of the bioconcentratable substances was performed by comparing the detection limit, adjusted by the 7Q10 flow, to a health based limit, in accordance with the TSD (References at No. 39) guidance. If this further evaluation yielded an adjusted detection limit which was less than the human health-based limit, these parameters were also eliminated from further consideration.

(2d) Detected at or near method detection limit (MDL) in plant influents and final plant effluent but detected in one or more other locations at some time. These parameters were detected at or near the MDL in sampling of plant influents and final plant effluent but were detected in one or more other sampling locations during the fate and effects sampling program. These were also characterized as bioconcentratable (2dY) and further evaluated or nonbioconcentratable (2dN) substances. Nonbioconcentratable substances were dismissed from further consideration based on the same rationale offered for footnote 2c above. Bioconcentratable substances were evaluated using the same rationale explained in footnote 2c above.

(3a) Not detected in final effluent but detected in plant influents and not a bioconcentratable substance. These parameters were detected in plant influents but were not detected in the final effluent and are nonbioconcentratable substances. These parameters were not further evaluated as they were not apparent in the final effluent and offered no threat of bioaccumulativeness even if present below detectable levels.

(3b) Not detected in final effluent but detected in either plant influent and a bioconcentratable substance. These parameters were detected in plant influents and are bioconcentratable substances but were not detected in the final effluent. These parameters, although undetected in the effluent, were further evaluated for bioaccumulation potential based on the supposition that they may be present in the effluent albeit at a concentration below the MDL. The evaluation of these bioconcentratable substances was performed using the same rationale explained in footnote 2c above.

4. Not detected in either influent but detected at or near MDL in final effluent. These parameters were not detected in plant influents but were detected at or near MDL in the final effluent. These parameters were further identified as bioconcentratable (4Y) or not (4N) to

determine if there was a need for further evaluation. As none of these parameters were identified as potentially bioaccumulative, they were dismissed from further evaluation.

5. Sporadic detection and no health or aquatic criteria identified. These parameters were detected at various locations during various sampling events with no pattern of occurrence identifiable. Attempts were made to identify health or aquatic criteria for these parameters with no success. Accordingly, these parameters had insufficient data on which to evaluate the need for local industrial limits and were dismissed from further consideration.

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REVIEW OF JUNE 1988 DATA DEVELOPED
AT AMERICAN BOTTOMS REGIONAL WASTEWATER
TREATMENT FACILITY

Prepared for:

Horner and Shifrin

Prepared by:

EA Mid-Atlantic Regional Operations
EA Engineering, Science, and Technology, Inc.

CER 055546

22 December 1989

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APPENDIX B

REVIEW OF JUNE 1988 DATA DEVELOPED AT AMERICAN BOTTOMS REGIONAL WASTEWATER TREATMENT FACILITY

(Prepared by EA Engineering, Science, and Technology, Inc.)

CER 055545

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EXECUTIVE SUMMARY

EA Engineering, Science, and Technology, Inc. conducted a review of the June 1988 analytical data developed by Gulf Coast Laboratories at the American Bottoms Regional Wastewater Treatment Facility (ABRWTF). The review was conducted to determine compliance with the requirements of the Statements of Work of the U.S. Environmental Protection Agency Contract Laboratory Program (CLP).

Generally, the analyses that are regulated by CLP were performed following CLP methodologies and QC protocols. Parameters for which there are no CLP regulations were determined using CLP-like protocols which include method blanks, laboratory control samples, spikes and duplicate analyses. However, the data and the QA/QC deliverables were not presented in the standard CLP format.

Although several data deficiencies were identified, (i.e., compliance with holding times and lack of adherence to CLP reporting guidelines), these deficiencies are not believed to be recurring with any frequency or of such significance that the data could be considered invalid. For the intended use of developing a pre-treatment program, these data appear acceptable.

1. INTRODUCTION

At the request of Horner and Shifrin, EA Engineering, Science and Technology, Inc. conducted a review of one month's worth of data collected at the American Bottoms Wastewater Treatment Facility by Gulf Coast Laboratories, Inc. (GCL). The purpose of this review was to determine 1) if the analytical methods were appropriate for the analyses, 2) if the reported values were supported by the analytical package and 3) if the instrument calibrations, method blanks, matrix spikes and matrix spike duplicates were within acceptable guidelines. Due to the large size of the analytical database developed for the pretreatment program (priority pollutant scans as well as analyses for specific non-priority and conventional pollutants and computer searches for unknown peaks for 12 sample periods at 11 sampling locations), a review of the entire database was considered inappropriate. Therefore, only one month's worth of data was reviewed to determine data quality. Based on the review of the June 1988 data, a second set of data (May 1988) was reviewed to specifically evaluate the data for compliance with analytical holding times.

This data review is organized according to the following: Section 2 contains a review of the June 1988 analytical data. This review was conducted to determine compliance with the requirements of the Statements of Work (SOW) of the U.S. EPA Contract Laboratory Program (CLP) (U.S. EPA 1987, 1988a). Based on the results of this evaluation, the May 1988 data was evaluated for compliance with analytical holding times and the results of this review are presented in Section 3. Section 4 contains general conclusions of the review. In order to facilitate understanding of this document, a glossary of acronyms used in EPA CLP are presented in Attachment I.

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2. REVIEW OF THE JUNE 1988 DATA

The data and the reporting deliverables for the June 1988 sampling at American Bottoms Wastewater Treatment Facility were reviewed against the requirements of the Statements of Work (SOW) of the U.S. EPA Contract Laboratory Program (CLP) (EPA 1987; EPA 1988a). In addition the EPA data validation guidelines were consulted (EPA 1988b; EPA 1988c); however, a full-scale data validation was not performed. The CLP SOWs prescribe requirements in three areas: methodology, quality assurance/quality control, and data deliverables. The U.S. EPA validation guidelines go beyond the contract requirements of the SOWs and require wider technical judgments about matters that, while they fulfill the requirements of the SOWs, may affect the data quality (e.g., interpretation and ultimate use of data in light of contamination of laboratory blanks, poor matrix spike recovery, etc.).

The analyses that are regulated by CLP were performed following CLP methodologies and QC protocols. Non-CLP parameters were determined using CLP-like protocols which include method blanks, laboratory control samples, spikes, and duplicates. The data and the QA/QC deliverables are not in the standard CLP format. The following sections provide the results of the data review, divided by the topic covered and the findings.

Deliverables

The deliverables include report forms for samples, blanks, laboratory control samples and spikes, raw data (e.g., chromatograms, instrument printouts, bench sheets), and QA/QC data summaries. The package is divided into sections: metals, volatile organics, semivolatile organics, pesticides/PCBs, and wet chemistry. Each section is preceded by a case narrative, which highlights problems encountered during the sample analysis. The package is not organized according to standard CLP format. Further, the use of the CLP forms is haphazard and inconsistent among the different sections. While the lack of the CLP forms does not necessarily affect data quality, it made it more difficult to locate and evaluate the data. The absence of a fixed format also made it easier for the preparer(s) to overlook or omit data. Noted below are several omissions that prevent a complete review. Also necessary for a complete review are copies of the extraction and digestion logs. The package contains excellent documentation of the non-CLP EP Toxicity procedure. The following is a list of missing documentation, problems, and errors in the reported data:

- A typographical error occurred in the table that cross-references the client sample IDs and the laboratory numbers; the lab number for sample '#4 ABTP Secondary Influent' should be 132941, not 132940.

- The semivolatile sample data sheets (CLP Forms 1B & 1C) for sample 132936 are missing.

- The TIC data sheet, reconstructed ion chromatogram, quantitation report, and spectra of identified compounds for the semivolatiles on sample 133021 are missing.

- The GCL analytical report form for pesticides on sample 132936 lists aldrin as BDL (below detection limit) at 15 ug/L. The chromatogram shows aldrin quantitated at 15 ug/L. It appears that the detection limit should be 5 ug/L, in line with those reported for the other pesticides in that sample, and that aldrin was detected at 15 ug/L.

- The bench sheet for the determination of chloride on sample 133022 shows that it was analyzed as a solid and gives the concentration as 1100 mg/kg; the GCL analytical report form lists the concentration as 1100 mg/L. Chloride is the only parameter for which this sample was treated as a solid, aliquoted by weight rather than by volume.

- The results for chloride and oil & grease for the sludge cake samples 132942 and 132943 were converted to a dry-weight basis using values for the percent solids that were different than those used for the other parameters, 23.7 and 18.1%, respectively. There is no documentation to indicate that the samples were pretreated or partially dried before analysis. Listed below are the wet-

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weight values (in mg/kg) from the bench sheets, the values (in mg/kg) from the analytical reports, and the apparent percent solids.

Parameter/ Sample Number	Wet-Weight	Reported	Apparent % Solids
Chloride			
132942	800	2800	28.6
132943	430	2600	16.5
Oil & Grease			
132942	89,000	150,000	59.3
132943	16,000	32,000	50.0

<u>Holding Times</u>

The holding times given in the SOW are calculated from the time of sample receipt in the laboratory. The data validation guidelines require that the holding times meet the requirements of the Clean Water Act (40 CFR 136.3, Table II-Required Containers, Preservation Techniques, and Holding Times), which start at the time of sample collection.

Metals: Holding times for AA, ICP, and CV determinations were met.

Volatile Organics: The holding time in the SOW is 10 days after sample receipt and that in 40 CFR 136.3 is 14 days from sample collection (7 days for unpreserved samples for the determination of volatile aromatics). The actual holding times in days are as follows:

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Sample Number	From Collection	From Receipt
132936-132939	13	13
132940-132941	12	12
132942-132943	13	13
132944	12	12
133020	14	14
133021	15	14
133022	25	24
133023	24	24

None of the holding times meet the SOW requirements. Except for the last three samples, the holding times are within the 14 day holding period allowed in 40 CFR 136.3; however, the 7-day holding time for unpreserved volatile aromatics (benzene, toluene, ethylbenzene, xylenes) has not been met. Volatile aromatics were detected in all the samples. The holding times for the last two samples (133022 and 133023) have been grossly exceeded.

Semivolatile Organics: Holding times for extraction and analysis were met.

Pesticides/PCBs: Holding times for extraction and analysis were met.

Wet Chemistry: Holding times from 40 CFR 136.3 were met for all parameters except hexavalent chromium. The holding time for hexavalent chromium is 24 hours. Samples 132942 and 133021-133023 were analyzed 20 days after collection.

GC/MS Tune

Volatile Organics: BFB tuning criteria were met, and all samples were analyzed within twelve hours of the tunes as required by the CLP.

Semivolatile Organics: The DFTPP tune data for the samples (132941-132944 and 133020-133023) analyzed on 21 June are not included; the tune data for the other dates are included in the package and meet the tuning criteria. All samples were analyzed within twelve hours of the tunes as required by the CLP.

GC Instrument Performance

Pesticides/PCBs: Although the case narrative states that the linearity and breakdown criteria were met, no data are included for the DDT/endrin breakdown.

Calibration

Metals: A blank and at least three standards were used daily to calibrate the AA analyses; a blank and one standard were used for ICP analyses.

Volatile Organics: The five-point initial calibration and the continuing (daily) calibrations meet SOW criteria.

Semivolatile Organics: Data for the five-point initial calibration are not included. The continuing calibration data for the samples (132941-132944 and 133020-133023) analyzed on 21 June are not included.

Pesticides/PCBs: The linearity criteria were not met for 4,4'-DDT, but this is not a problem because no 4,4'-DDT was quantified in the samples.

Wet Chemistry: Colorimetric procedures were calibrated with a minimum of five standards plus a blank, except for COD, which used only two standards and a blank; in addition, the concentrations were measured and used that were up to four times higher than the concentration of the highest standard. The QC data looks good, but the QC samples were in the range of the high standard. The calibration curve cannot be considered to be defined adequately beyond the highest standard. The values for samples 132937 and 133021-133023 should be considered as estimates only.

Blanks

Metals: The case narrative discusses the problems with boron and zinc. For boron, the concentration of boron in the preparation blank was greater than 1/10 the sample concentration for several samples. Similarly, for zinc, it is believed that the high levels of zinc in several samples caused contamination in the preparation blank as well as in the laboratory control samples.

Volatile Organics: Acetone was detected in the method blanks, but the concentrations were less than five times the CRQL.

Semivolatile Organics: Bis(2-ethylhexyl) phthalate was detected in the method blanks, but the concentrations were less than five times the CRQL.

Pesticides/PCBs: No target analytes were detected in the method blanks.

Wet Chemistry: No analyte was detected in any method blanks above the method detection limit.

Matrix Spike/Duplicate

Volatile Organics: For the water sample spikes seven out of ten of the percent recoveries and five of the five RPDs were outside the limits. In light of this, the current guidance states that the data should be evaluated using best professional judgment. However, as noted previously, a full-scale data validation, which would have further evaluated these data, was not conducted. No matrix spike was prepared for the solid samples.

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Semivolatile Organics: Samples 132938 and 132939 were used as the matrix spike (MS) and matrix spike duplicate (MSD), respectively, for sample 132937. Four out of 22 of the percent recoveries and none of the 11 RPDs were outside the limits. Sample 132943 was used for the solid MS/MSD. Two out of 22 of the percent recoveries and none of the 11 RPDs were outside the limits.

Pesticides/PCBs: For the solid sample spikes the percent recoveries and RPDs were within the advisory limits, except for aldrin, which was influenced by a coeluting peak. No recovery was observed for the water sample because of the dilutions that were required.

Surrogates

Volatile Organics: The recoveries of the surrogate compounds in the blanks and samples met SOW criteria. Two samples that had one surrogate outside the limits were rerun with similar results, indicating a probable matrix problem.

Semivolatile Organics: The surrogate recoveries met the required criteria.

Pesticides/PCBs: The recovery of DBC from the method blanks and spiked blanks was satisfactory, as was that for the solid samples (132942 and 132943) and their matrix spike and matrix spike duplicate. No DBC recovery was reported for the water samples, probably due to the Florisil cleanup and dilutions that were necessary because of the matrix interferences.

Laboratory Control Samples

Metals: All results were in the acceptable range, except for zinc, which was slightly above the upper limit (121 versus 120).

Wet Chemistry: All the recoveries were between 80 and 120 percent.

Matrix Spikes

Metals: The SOW criteria were met; for a number of the parameters on the solid sample the sample concentration was greater than four times the spike level so that the 75-125% limits did not apply.

Wet Chemistry: The percent recoveries were between 75-125% for cyanide as required by the CLP.

Duplicates

Metals: The SOW criteria were met.

Wet Chemistry: As required by the CLP for cyanide, the RPDs were less than 20% or ±CRDL when the concentration is less than five times the CRDL.

Conclusions Regarding Review of the June 1988 Data

The major findings that affect the quality of the results produced are the result of holding time problems. The hexavalent chromium data, including the less than the detection limit values, produced two weeks after sampling are unusable. The volatile data produced outside the holding times are best treated as estimates only. The lack of certain documentation prevents a judgment on the completeness and quality of the data affected. The missing data and documentation would have to be provided to perform a complete data validation.

3. REVIEW OF COMPLIANCE WITH HOLDING TIMES IN THE MAY 1988 DATA

The review of the data package for the June 1988 sampling showed that several analyses exceeded acceptable holding times for the determination of hexavalent chromium and of volatile organics. In order to determine if this was a recurring problem, the holding times for the data generated during the May 1988 sampling event at American Bottoms were evaluated. The time that elapsed between sample collection and analysis was compared with the holding time requirements of 40 CFR 136.3, Table II - Required Containers, Preservation Techniques, and Holding Times. Table 1 lists the 40 CFR 136 holding times for each analyte/parameter and the date of analysis and the elapsed time for each sample.

The holding times were met for the volatile determinations in the May 1988 sampling. The raw data for hexavalent chromium from which to calculate the elapsed times for these determinations was unavailable. The pesticide extraction times for two samples (6 & 7) were one day outside the seven-day holding time. An apparent missing page of the phenol raw data prevented a determination of the elapsed times for samples 6 through 11. Three BOD samples (4, 5, & 11) required reanalysis, which put them outside the holding time. Holding times were met for all other parameters.

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TABLE 1. ELAPSED TIME BETWEEN COLLECTION AND ANALYSIS FOR THE AMERICAN BOTTOMS SAMPLING OF 4 MAY 1989

Analyte/ Parameter	EPA Holding Time[1]	Analysis Date and Elapsed Time (days)											
		1 P-Chem Influent		2 P-Chem Effluent		3 Primary Influent		4 Secondary Influent		5 Effluent		6 P-Chem Sludge Cake	
BOD	48 h	5/05	1	5/05	1	5/05	1	5/11	7	5/11	7	NA	
COD	28 d	5/18	14	5/18	14	5/18	14	5/18	14	5/18	14	5/18	14
Chloride	28 d	5/16	12	5/16	12	5/16	12	5/16	12	5/16	12	5/17	13
Cyanide	14 d	5/13	9	5/13	9	5/13	9	5/13	9	5/13	9	5/13	9
Fluoride	28 d	5/19	15	5/19	15	5/19	15	5/13	9	5/13	9	5/19	15
Oil & Grease	28 d	5/12	8	5/12	8	5/12	8	5/12	8	5/12	8	5/12	8
Phenols	28 d	5/09	5	5/09	5	5/09	5	5/09	5	5/09	5	ND	
TDS	7 d	5/11	7	5/11	7	5/11	7	5/11	7	5/11	7	5/11	7
TSS	7 d	5/09	5	5/09	5	ND		5/10	6	5/10	6	NA	
Sulfate	28 d	5/10	6	5/10	6	5/10	6	5/10	6	5/10	6	NA	
TOC	28 d	5/09	5	5/09	5	5/09	5	5/09	5	5/09	5	5/09	5
Volatiles	14 d	5/09	5	5/09	5	5/09	5	5/09	5	5/09	5	5/11	7
Semivolatiles													
Until extraction	7 d	5/09	5	5/09	5	5/09	5	5/09	5	5/09	5	5/06	2
After extraction	40 d	5/10	1	5/10	1	5/10	1	5/11	2	5/11	4	5/10	4
Pesticides													
Until extraction	7 d	5/11	7	5/11	7	5/11	7	5/11	7	5/11	7	5/12	8
After extraction	40 d	5/12	1	5/12	1	5/12	1	5/12	1	5/12	1	5/13	1
Chromium(VI)	24 h	ND		ND		ND		ND		ND		ND	
Mercury	28 d	5/12	8	5/12	8	5/12	8	5/12	8	5/12	8	5/12	8
Other metals	6 mo	All determinations completed by 6/1											

1. 40 CFR Part 136.
ND No data available.
NA Not applicable.

TABLE 1. (Cont.)

Analyte/ Parameter	EPA Holding Time[1]	Analysis Date and Elapsed Time (days)									
		7 Primary/ Secondary		8 Aeration Basin Effl.		9 Overflow Secondary		10 Underflow Secondary		11 Overflow Primary	
BOD	48 h	NA		5/05	1	5/11	7	5/05	1	5/05	1
COD	28 d	5/18	14	5/18	14	5/18	14	5/18	14	5/18	14
Chloride	28 d	5/17	13	5/10	6	5/10	6	5/10	6	5/10	6
Cyanide	14 d	5/13	9	5/13	9	5/13	9	5/13	9	5/13	9
Fluoride	28 d	5/19	15	5/19	15	5/13	9	5/13	9	5/13	9
Oil & Grease	28 d	5/19	15	5/12	8	5/12	8	5/12	8	5/12	8
Phenols	28 d	ND		ND		ND		ND		ND	
TDS	7 d	5/11	7	5/11	7	5/11	7	5/11	7	5/11	7
TSS	7 d	NA		5/10	6	5/10	6	5/10	6	5/10	6
Sulfate	28 d	NA		5/12	8	5/12	8	5/12	8	5/12	8
TOC	28 d	5/09	5	5/09	5	5/09	5	5/09	5	5/09	5
Volatiles	14 d	5/11	7	5/10	6	5/10	6	5/10	6	5/10	6
Semivolatiles											
Until extraction	7 d	5/06	2	5/09	5	5/09	5	5/09	5	5/09	5
After extraction	40 d	5/10	4	5/11	2	5/11	2	5/11	2	5/11	2
Pesticides											
Until extraction	7 d	5/12	8	5/11	7	5/11	7	5/11	7	5/11	7
After extraction	40 d	5/13	1	5/12	1	5/12	1	5/12	1	5/12	1
Chromium(VI)	24 h	ND		ND		ND		ND		ND	
Mercury	28 d	5/12	8	5/12	8	5/12	8	5/12	8	5/12	8
Other metals	6 mo	All determinations completed by 6/1									

1. 40 CFR Part 136.
ND No data available.
NA Not applicable.

4. CONCLUSIONS

The analyses that are regulated by CLP were performed following CLP methodologies and QC protocols. Non-CLP parameters were determined using CLP-like protocols which include method blanks, laboratory control samples, spikes, and duplicates. The data and the QA/QC deliverables are not in the standard CLP format.

Although several data deficiencies were identified (i.e., compliance with holding times), these deficiencies are not believed to be recurring with any frequency that would invalidate the data. For the intended use, development of a pre-treatment program, these data appear acceptable.

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5. REFERENCES

United States Environmental Protection Agency. 1987. Contract Laboratory Program Statement of Work for Inorganic Analysis. SOW No. 787. U.S. EPA, Washington, D.C.

United States Environmental Protection Agency. 1988a. Contract Laboratory Program Statement of Work for Organic Analysis. U.S. EPA, Washington, D.C.

United States Environmental Protection Agency. 1988b. Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses. U.S. EPA, Washington, D.C.

United States Environmental Protection Agency. 1988c. Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses. U.S. EPA, Washington, D.C.

ATTACHMENT I

GLOSSARY

GLOSSARY

AA	Atomic absorption spectroscopy - an analytical method for the determination of metals.
BFB	4-Bromofluorobenzene - the tuning compound for the GC/MS determination of volatile organic compounds.
CRDL	Contract required detection limit - the maximum detection limit acceptable under the inorganic CLP SOW (qv).
CRQL	Contract required quantitation limit - the reporting limit under the organic CLP SOW (qv).
CV	Cold vapor atomic absorption spectroscopy - an analytical method for the determination of mercury.
DBC	Dibutyl chlordenate - the surrogate compound used in the determination of pesticides.
DFTPP	Decafluorotriphenylphosphine - the tuning compound for the GC/MS determination of semivolatile organic compounds.
ICP	Inductively coupled plasma atomic emission spectroscopy - an analytical method for the determination of metals.
RPD	Relative percent difference - a measure of the precision of duplicate measurements.
SOW	Statement of work - the contract requirements for the U.S. EPA contract laboratory program (CLP); available for inorganics (metals plus cyanide) and organics (volatiles, semivolatiles, and pesticides).
TIC	Tentatively identified compound - compound detected in a sample that is not a target compound, internal standard, or surrogate standard, identified by mass spectral library search.

APPENDIX C-1

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX C-1

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

PARAMETER (1)	REMOVAL (%)	MONTH
1,1,1-Trichloroethane	(5)	AUGUST
1,1,1-Trichloroethane	100.00 (2)	OCTOBER
1,1,1-Trichloroethane	94.75	DECEMBER
1,2-Dichlorobenzene	53.00	MAY
1,2-Dichlorobenzene	23.00	JUNE
1,2-Dichlorobenzene	39.09	JULY
1,2-Dichlorobenzene	17.14	AUGUST
1,2-Dichlorobenzene	-31.82	SEPTEMBER
1,2-Dichlorobenzene	55.88	OCTOBER
1,2-Dichlorobenzene	89.29	NOVEMBER
1,2-Dichlorobenzene	47.73	DECEMBER
1,2-Dichlorobenzene	11.00	JANUARY
1,2-Dichlorobenzene	64.64	FEBRUARY
1,2-Dichlorobenzene	61.54	MARCH
1,2-Dichlorobenzene	82.73	APRIL
1,3-Dichlorobenzene	100.00 (2)	MAY
1,3-Dichlorobenzene	100.00 (2)	JUNE
1,3-Dichlorobenzene	(5)	JULY
1,3-Dichlorobenzene	30.00	AUGUST
1,3-Dichlorobenzene	-12.50 (4)	SEPTEMBER
1,3-Dichlorobenzene	(3)(4)(5)	OCTOBER
1,3-Dichlorobenzene	91.91	NOVEMBER
1,3-Dichlorobenzene	100.00	DECEMBER
1,3-Dichlorobenzene	100.00	FEBRUARY
1,4-Dichlorobenzene	64.17	MAY
1,4-Dichlorobenzene	20.27	JUNE
1,4-Dichlorobenzene	31.08	JULY
1,4-Dichlorobenzene	29.63	AUGUST
1,4-Dichlorobenzene	20.83	SEPTEMBER
1,4-Dichlorobenzene	50.91	OCTOBER
1,4-Dichlorobenzene	90.48	NOVEMBER
1,4-Dichlorobenzene	40.00	DECEMBER
1,4-Dichlorobenzene	26.67	JANUARY
1,4-Dichlorobenzene	64.71	FEBRUARY
1,4-Dichlorobenzene	64.58	MARCH
1,4-Dichlorobenzene	84.44	APRIL

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APPENDIX C-1

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

PARAMETER	REMOVAL (%)	MONTH
2,4-Dichlorophenol	(5)	JULY
2,4-Dichlorophenol	(5)	AUGUST
2,4-Dichlorophenol	(5)	OCTOBER
2,4-Dichlorophenol	22.73	JANUARY
2,4-Dichlorophenol	(5)	FEBRUARY
2-Butanone	100.00 (2)	OCTOBER
2-Butanone	76.92	DECEMBER
2-Chlorophenol	17.39	JUNE
2-Chlorophenol	(5)	JULY
2-Chlorophenol	25.86	AUGUST
2-Chlorophenol	9.09	SEPTEMBER
2-Chlorophenol	9.09	OCTOBER
2-Chlorophenol	(5)	NOVEMBER
2-Chlorophenol	43.40	JANUARY
2-Nitroaniline	16.67	MAY
2-Nitroaniline	-53.45	JUNE
2-Nitroaniline	5.00	JULY
2-Nitroaniline	-7.14	AUGUST
2-Nitroaniline	-16.44	SEPTEMBER
2-Nitroaniline	-34.15	OCTOBER
2-Nitroaniline	24.24	NOVEMBER
2-Nitroaniline	-14.29	DECEMBER
2-Nitroaniline	-25.00	JANUARY
2-Nitroaniline	0.00 (3)	FEBRUARY
2-Nitroaniline	11.36	MARCH
2-Nitroaniline	-33.33	APRIL
2-Nitrophenol	-15.38	MAY
2-Nitrophenol	14.58	JUNE
2-Nitrophenol	-16.28	JULY
2-Nitrophenol	34.48	AUGUST
2-Nitrophenol	25.00	SEPTEMBER
2-Nitrophenol	18.37	OCTOBER

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SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

PARAMETER	REMOVAL (%)	MONTH
2-Nitrophenol	-10.53	NOVEMBER
2-Nitrophenol	6.82	DECEMBER
2-Nitrophenol	70.27	JANUARY
2-Nitrophenol	32.73	FEBRUARY
2-Nitrophenol	11.11	MARCH
2-Nitrophenol	-61.67	APRIL
4-Chloroaniline	-207.69	MAY
4-Chloroaniline	-580.00	JUNE
4-Chloroaniline	-6.25	JULY
4-Chloroaniline	(5)	AUGUST
4-Chloroaniline	-15.79	SEPTEMBER
4-Chloroaniline	0.00	OCTOBER
4-Chloroaniline	53.68	NOVEMBER
4-Chloroaniline	(5)	DECEMBER
4-Chloroaniline	(5)	JANUARY
4-Chloroaniline	-220.83	MARCH
4-Chloroaniline	-4.44	APRIL
4-Methyl-2-Pentanone	-192.14	MAY
4-Methyl-2-Pentanone	-262.50	JUNE
4-Methyl-2-Pentanone	100.00 (2)	JULY
4-Methyl-2-Pentanone	100.00 (2)	AUGUST
4-Methyl-2-Pentanone	-1.33	NOVEMBER
4-Nitroaniline	38.00	MAY
4-Nitroaniline	-38.46	JUNE
4-Nitroaniline	39.17	JULY
4-Nitroaniline	61.00	AUGUST
4-Nitroaniline	-23.08	SEPTEMBER
4-Nitroaniline	-46.67	OCTOBER
4-Nitroaniline	24.39	NOVEMBER
4-Nitroaniline	0.00 (3)	DECEMBER
4-Nitroaniline	-33.33	JANUARY
4-Nitroaniline	0.00 (3)	FEBRUARY
4-Nitroaniline	20.31	MARCH
4-Nitroaniline	-24.49	APRIL

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APPENDIX C-1
SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

PARAMETER	REMOVAL (%)	MONTH
4-Nitrophenol	26.53	MAY
4-Nitrophenol	-14.71	JUNE
4-Nitrophenol	76.92	JULY
4-Nitrophenol	-3.33	AUGUST
4-Nitrophenol	30.91	SEPTEMBER
4-Nitrophenol	-89.13	OCTOBER
4-Nitrophenol	11.90	NOVEMBER
4-Nitrophenol	-55.10	DECEMBER
4-Nitrophenol	40.00	JANUARY
4-Nitrophenol	8.33	FEBRUARY
4-Nitrophenol	24.17	MARCH
4-Nitrophenol	-140.51	APRIL
Acetone	16.67	MAY
Acetone	(5)	JUNE
Acetone	-94.44	JULY
Acetone	-53.33	AUGUST
Acetone	-389.13	SEPTEMBER
Acetone	-150.00	OCTOBER
Acetone	(5)	NOVEMBER
Acetone	79.41	DECEMBER
Acetone	90.00	JANUARY
Acetone	100.00	FEBRUARY
Acetone	-290.48	MARCH
Acetone	-345.71	APRIL
Aniline	30.00	MAY
Aniline	0.00 (3)	JUNE
Aniline	5.71	JULY
Aniline	-19.05	AUGUST
Aniline	25.00	SEPTEMBER
Aniline	-18.18	OCTOBER
Aniline	-17.65	NOVEMBER
Aniline	-20.00	DECEMBER
Aniline	12.50	JANUARY
Aniline	-100.00	FEBRUARY
Aniline	-25.00	MARCH
Aniline	-100.00	APRIL

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APPENDIX C-1

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

PARAMETER	REMOVAL (%)	MONTH
Arsenic	92.00	MAY
Arsenic	80.14	JUNE
Arsenic	98.31	JULY
Arsenic	79.10	AUGUST
Arsenic	23.08	SEPTEMBER
Arsenic	91.53	OCTOBER
Arsenic	100.00 (2)	NOVEMBER
Arsenic	77.59	DECEMBER
Arsenic	31.25	JANUARY
Arsenic	70.00	FEBRUARY
Arsenic	79.39	MARCH
Arsenic	65.22	APRIL
Barium	71.66	MAY
Barium	33.81	JUNE
Barium	92.39	JULY
Barium	20.71	AUGUST
Barium	54.55	SEPTEMBER
Barium	33.33	OCTOBER
Barium	90.96	NOVEMBER
Barium	27.85	DECEMBER
Barium	-32.26	JANUARY
Barium	44.91	FEBRUARY
Barium	100.00 (2)	MARCH
Barium	60.00	APRIL
Benzene	0.00 (3)	MAY
Benzene	11.11	JUNE
Benzene	-6.52	JULY
Benzene	33.64	AUGUST
Benzene	7.14	SEPTEMBER
Benzene	6.25	OCTOBER
Benzene	82.26	NOVEMBER
Benzene	61.11	DECEMBER
Benzene	15.00	JANUARY
Benzene	13.33	FEBRUARY
Benzene	17.27	MARCH
Benzene	32.19	APRIL

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APPENDIX C-1
SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

PARAMETER	REMOVAL (%)	MONTH
Bis(2-Ethylhexyl)Phthalate	100.00 (2)	JUNE
Bis(2-Ethylhexyl)Phthalate	33.33	AUGUST
Bis(2-Ethylhexyl)Phthalate	-83.33	SEPTEMBER
Bis(2-Ethylhexyl)Phthalate	(5)	OCTOBER
Bis(2-Ethylhexyl)Phthalate	(5)	NOVEMBER
Bis(2-Ethylhexyl)Phthalate	(5)	JANUARY
Boron	5.00	MAY
Boron	-19.15	JUNE
Boron	6.70	JULY
Boron	16.98	AUGUST
Boron	11.00	SEPTEMBER
Boron	-10.35	OCTOBER
Boron	9.45	NOVEMBER
Boron	23.13	DECEMBER
Boron	-28.18	JANUARY
Boron	-5.57	FEBRUARY
Boron	8.33	MARCH
Boron	38.09	APRIL
Butylbenzylphthalate	100.00 (2)	MAY
Butylbenzylphthalate	(5)	SEPTEMBER
Butylbenzylphthalate	94.57	OCTOBER
Butylbenzylphthalate	100.00 (2)	NOVEMBER
Butylbenzylphthalate	100.00 (2)	DECEMBER
Butylbenzylphthalate	92.58	FEBRUARY
COD	77.78	MAY
COD	31.03	JUNE
COD	91.20	JULY
COD	-62.50	AUGUST
COD	44.26	SEPTEMBER
COD	40.54	OCTOBER
COD	85.67	NOVEMBER
COD	16.13	DECEMBER
COD	25.71	JANUARY
COD	0.00 (3)	FEBRUARY
COD	71.43	MARCH
COD	46.00	APRIL

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SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

PARAMETER	REMOVAL (%)	MONTH
Cadmium	96.72	MAY
Cadmium	65.71	JUNE
Cadmium	97.82	JULY
Cadmium	56.63	AUGUST
Cadmium	81.82	SEPTEMBER
Cadmium	75.28	OCTOBER
Cadmium	99.08	NOVEMBER
Cadmium	100.00 (2)	DECEMBER
Cadmium	100.00 (2)	JANUARY
Cadmium	88.89	FEBRUARY
Cadmium	85.29	MARCH
Chloroaniline (7)	(5)	MAY
Chloroaniline (7)	(5)	JUNE
Chloroaniline (7)	-6.25	JULY
Chloroaniline (7)	(5)	NOVEMBER
Chloroaniline (7)	-100.00	DECEMBER
Chloroaniline (7)	(5)	JANUARY
Chloroaniline (7)	(5)	MARCH
Chloroaniline (7)	(5)	APRIL
Chlorobenzene (6a)	-20.51	MAY
Chlorobenzene (6b)	-122.22	MAY
Chlorobenzene (6a)	7.00	JUNE
Chlorobenzene (6b)	-106.25	JUNE
Chlorobenzene (6a)	-122.22	JULY
Chlorobenzene (6b)	40.91	JULY
Chlorobenzene (6a)	-19.23	AUGUST
Chlorobenzene (6b)	19.61	AUGUST
Chlorobenzene (6a)	-55.00	SEPTEMBER
Chlorobenzene (6b)	21.43	SEPTEMBER
Chlorobenzene (6a)	-103.23	OCTOBER
Chlorobenzene (6b)	-16.33	OCTOBER
Chlorobenzene (6a)	-10.84	NOVEMBER
Chlorobenzene (6b)	(5)	NOVEMBER
Chlorobenzene (6a)	48.05	DECEMBER
Chlorobenzene (6b)	12.50	DECEMBER
Chlorobenzene (6a)	-24.32	JANUARY
Chlorobenzene (6b)	30.00	JANUARY

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REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

PARAMETER	REMOVAL (%)	MONTH
Chlorobenzene (6a)	-50.00	FEBRUARY
Chlorobenzene (6b)	(5)	FEBRUARY
Chlorobenzene (6a)	33.33	MARCH
Chlorobenzene (6b)	(5)	MARCH
Chlorobenzene (6a)	8.26	APRIL
Chlorobenzene (6b)	0.00 (3)	APRIL
Chloroform	(5)	FEBRUARY
Chloroform	100.00 (2)	MARCH
Chloroform	100.00 (2)	APRIL
Chloronitrobenzene (7)	20.90	MAY
Chloronitrobenzene (7)	10.03	JUNE
Chloronitrobenzene (7)	-0.75	JULY
Chloronitrobenzene (7)	-5.41	AUGUST
Chloronitrobenzene (7)	15.38	SEPTEMBER
Chloronitrobenzene (7)	-1.95	OCTOBER
Chloronitrobenzene (7)	28.18	NOVEMBER
Chloronitrobenzene (7)	48.72	DECEMBER
Chloronitrobenzene (7)	0.00 (3)	JANUARY
Chloronitrobenzene (7)	-6.00	FEBRUARY
Chloronitrobenzene (7)	11.67	MARCH
Chloronitrobenzene (7)	-60.00	APRIL
Chromium, Hexavalent	100.00 (2)(4)	AUGUST
Chromium, Total	100.00 (2)	JUNE
Chromium, Total	99.20	JULY
Chromium, Total	100.00 (2)	AUGUST
Chromium, Total	76.62	SEPTEMBER
Chromium, Total	100.00 (2)	OCTOBER
Chromium, Total	100.00 (2)	NOVEMBER
Chromium, Total	100.00 (2)	DECEMBER
Chromium, Total	100.00 (2)	JANUARY
Chromium, Total	97.09	FEBRUARY
Chromium, Total	81.79	MARCH
Chromium, Total	100.00 (2)	APRIL

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REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

PARAMETER	REMOVAL (%)	MONTH
Chromium, Trivalent	100.00 (2)	JUNE
Chromium, Trivalent	99.20	JULY
Chromium, Trivalent	100.00 (2)	AUGUST
Chromium, Trivalent	76.62	SEPTEMBER
Chromium, Trivalent	100.00 (2)	OCTOBER
Chromium, Trivalent	100.00 (2)	NOVEMBER
Chromium, Trivalent	100.00 (2)	DECEMBER
Chromium, Trivalent	100.00 (2)	JANUARY
Chromium, Trivalent	97.09	FEBRUARY
Chromium, Trivalent	100.00 (2)	APRIL
Copper	99.38	MAY
Copper	94.69	JUNE
Copper	99.61	JULY
Copper	93.93	AUGUST
Copper	82.69	SEPTEMBER
Copper	96.72	OCTOBER
Copper	99.58	NOVEMBER
Copper	98.06	DECEMBER
Copper	96.96	JANUARY
Copper	93.69	FEBRUARY
Copper	80.44	MARCH
Copper	97.03	APRIL
Cyanides, total	100.00 (2)	FEBRUARY
Cyanides, total	(4)(5)	MARCH
Dichlorobenzene (7)	100.00 (2)	MAY
Dichlorobenzene (7)	-2.38 (2)	JULY
Dichlorobenzene (7)	-28.57 (2)	DECEMBER
Dichlorobenzene (7)	(5)	JANUARY
Dichlorobenzene (7)	-566.67 (2)	MARCH
Ethoxybenzenamine	100.00 (2)	MAY
Ethylbenzene	-54.93	MAY
Ethylbenzene	-28.57	JUNE
Ethylbenzene	0.00 (3)	JULY
Ethylbenzene	94.22	AUGUST
Ethylbenzene	28.57	AUGUST
Ethylbenzene	-127.27	OCTOBER

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REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

PARAMETER	REMOVAL (%)	MONTH
Ethylbenzene	-102.70	NOVEMBER
Ethylbenzene	83.47	DECEMBER
Ethylbenzene	-18.52	JANUARY
Ethylbenzene	-72.73	FEBRUARY
Ethylbenzene	33.82	MARCH
Ethylbenzene	-58.21	APRIL
Fluoride	20.00	MAY
Fluoride	16.67	JUNE
Fluoride	-20.00	JULY
Fluoride	0.00 (3)	AUGUST
Fluoride	0.00 (3)	SEPTEMBER
Fluoride	6.25	OCTOBER
Fluoride	21.74	NOVEMBER
Fluoride	-36.36	DECEMBER
Fluoride	6.25	JANUARY
Fluoride	-200.00	FEBRUARY
Fluoride	0.00 (3)	MARCH
Fluoride	15.46	APRIL
Iron	99.38	MAY
Iron	97.89	JUNE
Iron	99.89	JULY
Iron	97.18	AUGUST
Iron	93.19	SEPTEMBER
Iron	99.03	OCTOBER
Iron	99.86	NOVEMBER
Iron	92.94	DECEMBER
Iron	97.99	JANUARY
Iron	98.69	FEBRUARY
Iron	94.69	MARCH
Iron	98.53	APRIL
Lead	93.20	MAY
Lead	99.33	JUNE
Lead	99.89	JULY
Lead	93.48	SEPTEMBER
Lead	98.21	OCTOBER
Lead	99.86	NOVEMBER

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PARAMETER	REMOVAL (%)	MONTH
Lead	72.09	DECEMBER
Lead	100.00 (2)	FEBRUARY
Lead	100.00 (2)	APRIL
Manganese	54.10	MAY
Manganese	26.26	JUNE
Manganese	87.11	JULY
Manganese	28.83	AUGUST
Manganese	36.26	SEPTEMBER
Manganese	21.58	OCTOBER
Manganese	99.55	NOVEMBER
Manganese	52.32	DECEMBER
Manganese	99.81	JANUARY
Manganese	71.54	FEBRUARY
Manganese	82.35	MARCH
Manganese	89.28	APRIL
Mercury	100.00 (2)	MAY
Mercury	100.00 (2)	JUNE
Mercury	100.00 (2)	AUGUST
Mercury	100.00 (2)	SEPTEMBER
Mercury	100.00 (2)	OCTOBER
Mercury	12.50	DECEMBER
Mercury	100.00 (2)	JANUARY
Mercury	100.00 (2)	FEBRUARY
Mercury	100.00 (2)	MARCH
Methylene Chloride	32.31	AUGUST
Methylene Chloride	-7.14	SEPTEMBER
Methylene Chloride	-6.25	OCTOBER
Methylene Chloride	78.18	DECEMBER
Methylene Chloride	91.17	JANUARY
Methylene Chloride	47.06	FEBRUARY

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PARAMETER	REMOVAL (%)	MONTH
Methylene Chloride	50.56	MARCH
Methylene Chloride	28.00	APRIL
Naphthalene	100.00 (2)	MAY
Naphthalene	(5)	JULY
Naphthalene	-9.76	SEPTEMBER
Naphthalene	51.85	OCTOBER
Naphthalene	89.00	NOVEMBER
Naphthalene	52.17	JANUARY
Naphthalene	57.00	MARCH
Nickel	85.00	MAY
Nickel	59.83	JUNE
Nickel	98.80	JULY
Nickel	65.68	AUGUST
Nickel	18.18	SEPTEMBER
Nickel	56.86	OCTOBER
Nickel	93.17	NOVEMBER
Nickel	83.66	DECEMBER
Nickel	80.75	JANUARY
Nickel	72.54	FEBRUARY
Nickel	40.00	MARCH
Nickel	73.89	APRIL
Nitrobenzene	-11.11	JULY
Nitrobenzene	-75.00	AUGUST
Nitrobenzene	-68.42	SEPTEMBER
Nitrobenzene	(5)	OCTOBER
Nitrobenzene	(5)	NOVEMBER
Nitrobenzene	14.29	DECEMBER
Nitrobenzene	39.17	JANUARY
Nitrobenzene	38.89	FEBRUARY
Nitrobenzene	(5)	MARCH
Nitrobenzene	(5)	APRIL
Oil and Grease	86.36	MAY
Oil and Grease	94.00	JUNE
Oil and Grease	89.17	JULY
Oil and Grease	61.63	AUGUST
Oil and Grease	38.67	SEPTEMBER
Oil and Grease	32.14	OCTOBER

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REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

PARAMETER	REMOVAL (%)	MONTH
Oil and Grease	93.89	NOVEMBER
Oil and Grease	53.57	DECEMBER
Oil and Grease	75.90	JANUARY
Oil and Grease	58.11	FEBRUARY
Oil and Grease	70.83	MARCH
Oil and Grease	88.75	APRIL
Phenol	14.00	AUGUST
Phenol	0.00 (3)	SEPTEMBER
Phenol	0.00 (3)	DECEMBER
Phenol	7.96	JANUARY
Phenol	-18.92	FEBRUARY
Phenol	(5)	MARCH
Phenol	(5)	APRIL
Phenolics	-11.54	MAY
Phenolics	-124.14	JUNE
Phenolics	-45.45	JULY
Phenolics	-246.67	AUGUST
Phenolics	-25.00	SEPTEMBER
Phenolics	-111.27	OCTOBER
Phenolics	38.89	NOVEMBER
Phenolics	-178.35	DECEMBER
Phenolics	26.67	JANUARY
Phenolics	5.00	FEBRUARY
Phenolics	24.64	MARCH
Phenolics	12.50	APRIL
Selenium	100.00 (2)	MAY
Selenium	100.00 (2)	JUNE
Selenium	100.00 (2)	JULY
Selenium	100.00 (2)	NOVEMBER
Silver	100.00 (2)	MAY
Silver	100.00 (2)	JUNE
Silver	100.00 (2)	NOVEMBER

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX C-1

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES

REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

PARAMETER	REMOVAL (%)	MONTH
Sulfates	15.38	MAY
Sulfates	0.00 (3)	JUNE
Sulfates	-1.75	JULY
Sulfates	1.15	AUGUST
Sulfates	0.00 (3)	SEPTEMBER
Sulfates	23.64	OCTOBER
Sulfates	9.09	NOVEMBER
Sulfates	9.18	DECEMBER
Sulfates	-7.69	JANUARY
Sulfates	10.00	FEBRUARY
Sulfates	13.07	MARCH
Sulfates	7.14	APRIL
TDS	-1.56	MAY
TDS	-17.65	JUNE
TDS	-9.68	JULY
TDS	-64.10	AUGUST
TDS	-8.57	SEPTEMBER
TDS	-16.22	OCTOBER
TDS	-14.81	NOVEMBER
TDS	-6.25	DECEMBER
TDS	-51.16	JANUARY
TDS	10.75	FEBRUARY
TDS	4.22	MARCH
TDS	1.54	APRIL
Toluene	-34.48	MAY
Toluene	(5)	JUNE
Toluene	60.00	JULY
Toluene	100.00 (2)	AUGUST
Toluene	-100.00	OCTOBER
Toluene	-5.56	NOVEMBER
Toluene	88.75	DECEMBER
Toluene	28.46	FEBRUARY
Toluene	100.00 (2)	MARCH
Toluene	(5)	APRIL
Trichloroethene	-376.19	APRIL
Xylene (6a)	-50.00	MAY
Xylene (6b)	-33.33	MAY

APPENDIX C-1
SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

PARAMETER	REMOVAL (%)	MONTH
Xylene (6b)	100.00 (2)	MAY
Xylene	-30.00	JUNE
Xylene	-2.27	JULY
Xylene	92.41	AUGUST
Xylene	-63.64	SEPTEMBER
Xylene	-100.00	OCTOBER
Xylene	-114.29	NOVEMBER
Xylene	26.41	DECEMBER
Xylene	-27.27	JANUARY
Xylene	44.83	FEBRUARY
Xylene	35.56	MARCH
Xylene	29.41	APRIL
Zinc	97.78	MAY
Zinc	92.47	JUNE
Zinc	99.69	JULY
Zinc	94.09	AUGUST
Zinc	84.39	SEPTEMBER
Zinc	93.75	OCTOBER
Zinc	99.60	NOVEMBER
Zinc	94.75	DECEMBER
Zinc	97.69	JANUARY
Zinc	97.40	FEBRUARY
Zinc	88.67	MARCH
Zinc	97.40	APRIL

(1) Only those parameters detected in the process during the month indicated are listed here.

(2) 100.00% removal indicates the parameter was detected in the influent but not in the effluent.

(3) 0.00% removal indicates the parameter was detected in the process influent and effluent at the same concentration.

(4) Influent and/or effluent concentrations were at or near method detection limits.

(5) Detected in process effluent but undetected in process influent.

APPENDIX C-1

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES

REMOVALS CALCULATED ACROSS SAUGET PHYSICAL-CHEMICAL PLANT

(6) a) Detected in GCMS scan as a volatile compound.
b) Tentatively identified in semivolatile library search.
Only the volatile data (6a) has been used in the calculation of the median removal efficiency.

(7) The isomer of this compound was not specified. The concentrations of all detects of this tentatively identified compound were summed for a given month to calculate removals for the compound. Refer to the specific isomer of interest for more reliable data.

APPENDIX C-2

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS PRIMARY

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX C-2

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS PRIMARY

PARAMETER (1)	REMOVAL (%)	MONTH
1,1,1-Trichloroethane	100.00 (2)(4)	AUGUST
1,1,1-Trichloroethane	28.57 (4)	DECEMBER
1,1,1-Trichloroethane	0.00 (3)(4)	FEBRUARY
1,1,1-Trichloroethane	-200.00 (4)	MARCH
1,1,1-Trichloroethane	100.00 (2)(4)	APRIL
1,2-Dichlorobenzene	20.00 (4)	JULY
1,2-Dichlorobenzene	-100.00 (4)	AUGUST
1,2-Dichlorobenzene	25.00 (4)	SEPTEMBER
1,2-Dichlorobenzene	(4)(5)	JANUARY
1,4-Dichlorobenzene	0.00 (3)(4)	AUGUST
1,4-Dichlorobenzene	100.00 (2)(4)	SEPTEMBER
1,4-Dichlorobenzene	(4)(5)	JANUARY
1,4-Dichlorobenzene	(4)(5)	APRIL
2-Butanone	100.00 (2)(4)	MAY
2-Butanone	100.00 (2)	JUNE
2-Butanone	(4)(5)	AUGUST
2-Butanone	-285.71 (4)	OCTOBER
2-Nitroaniline	(4)(5)	JULY
2-Nitroaniline	60.00 (4)	NOVEMBER
2-Nitroaniline	(4)(5)	DECEMBER
2-Nitroaniline	(4)(5)	FEBRUARY
2-Nitroaniline	(4)(5)	MARCH
2-Nitroaniline	73.33 (4)	APRIL
4-Methyl-2-Pentanone	100.00 (2)(4)	MAY
4-Methyl-2-Pentanone	89.53	JUNE
4-Methyl-2-Pentanone	-225.00 (4)	SEPTEMBER
4-Methyl-2-Pentanone	-90.91 (4)	NOVEMBER
4-Methyl-2-Pentanone	26.67	DECEMBER
4-Nitroaniline	100.00 (2)(4)	NOVEMBER
4-Nitrophenol	(4)(5)	DECEMBER
4-Nitrophenol	(4)(5)	JANUARY
4-Nitrophenol	100.00 (2)(4)	FEBRUARY
4-Nitrophenol	100.00 (2)(4)	APRIL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX C-2

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS PRIMARY

PARAMETER	REMOVAL (%)	MONTH
Acetone	70.27	MAY
Acetone	76.25	JUNE
Acetone	18.75	JULY
Acetone	-129.41	AUGUST
Acetone	(5)	SEPTEMBER
Acetone	-247.06	OCTOBER
Acetone	-92.86	NOVEMBER
Acetone	-37.50	DECEMBER
Acetone	-30.95	JANUARY
Acetone	43.40	FEBRUARY
Acetone	-29.27	MARCH
Acetone	4.69	APRIL
Alachlor	-10.00	MAY
Alachlor	(5)	FEBRUARY
Alachlor	33.33	APRIL
Arsenic	100.00 (2)(4)	MAY
Arsenic	42.86	JULY
Arsenic	42.53	AUGUST
Arsenic	28.57 (4)	SEPTEMBER
Arsenic	14.29	OCTOBER
Arsenic	6.25	JANUARY
Arsenic	37.50 (4)	FEBRUARY
Arsenic	0.00 (3)(4)	MARCH
Arsenic	(4)(5)	APRIL
Atrazine	0.00 (3)	DECEMBER
Atrazine	-33.33	JANUARY
Atrazine	0.00 (3)	APRIL
Barium	71.92	MAY
Barium	57.91	JUNE
Barium	82.48	JULY
Barium	59.81	AUGUST
Barium	63.33	SEPTEMBER
Barium	32.37	OCTOBER

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX C-2

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES

REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS PRIMARY

PARAMETER	REMOVAL (%)	MONTH
Barium	58.57	NOVEMBER
Barium	37.65	DECEMBER
Barium	54.21	JANUARY
Barium	51.09	FEBRUARY
Barium	69.66	MARCH
Barium	26.76	APRIL
Benzene	(4)(5)	MAY
Benzene	(4)(5)	JUNE
Benzene	(4)(5)	SEPTEMBER
Benzene	18.18 (4)	NOVEMBER
Benzene	80.00 (4)	FEBRUARY
Bis(2-Ethylhexyl)Phthalate	-35.29	JUNE
Bis(2-Ethylhexyl)Phthalate	30.30	JULY
Bis(2-Ethylhexyl)Phthalate	7.69 (4)	AUGUST
Bis(2-Ethylhexyl)Phthalate	20.00 (4)	SEPTEMBER
Bis(2-Ethylhexyl)Phthalate	28.13 (4)	OCTOBER
Bis(2-Ethylhexyl)Phthalate	38.89 (4)	NOVEMBER
Bis(2-Ethylhexyl)Phthalate	25.00 (4)	DECEMBER
Bis(2-Ethylhexyl)Phthalate	8.33 (4)	JANUARY
Bis(2-Ethylhexyl)Phthalate	-1100.00 (4)	FEBRUARY
Bis(2-Ethylhexyl)Phthalate	21.88	MARCH
Bis(2-Ethylhexyl)Phthalate	40.00 (4)	APRIL
Boron	-2.94	MAY
Boron	-17.79	JUNE
Boron	2.70	JULY
Boron	-16.18	AUGUST
Boron	-1.02	SEPTEMBER
Boron	1.31	OCTOBER
Boron	7.54	NOVEMBER
Boron	-12.50	DECEMBER
Boron	2.78	JANUARY
Boron	7.02	FEBRUARY
Boron	6.38	MARCH
Boron	6.45	APRIL
Butoxyethoxyethanol	100.00 (2)	MAY

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APPENDIX C-2

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS PRIMARY

PARAMETER	REMOVAL (%)	MONTH
Butylbenzylphthalate	-30.77 (4)	JUNE
Butylbenzylphthalate	50.00 (4)	JULY
Butylbenzylphthalate	-36.36 (4)	AUGUST
Butylbenzylphthalate	34.29 (4)	SEPTEMBER
Butylbenzylphthalate	40.00 (4)	OCTOBER
Butylbenzylphthalate	48.94 (4)	NOVEMBER
Butylbenzylphthalate	44.19 (4)	DECEMBER
Butylbenzylphthalate	16.98	JANUARY
Butylbenzylphthalate	88.00 (4)	FEBRUARY
Butylbenzylphthalate	25.00 (4)	MARCH
Butylbenzylphthalate	40.00 (4)	APRIL
COD	73.33	MAY
COD	33.33	JUNE
COD	54.29	JULY
COD	25.00	AUGUST
COD	54.17	SEPTEMBER
COD	27.59	OCTOBER
COD	23.81	NOVEMBER
COD	27.27	DECEMBER
COD	25.93	JANUARY
COD	0.00	FEBRUARY
COD	44.12	MARCH
COD	69.44	APRIL
Cadmium	-245.46	JUNE
Cadmium	20.00 (4)	JULY
Cadmium	36.84	AUGUST
Cadmium	-16.67 (4)	OCTOBER
Cadmium	100.00 (2)(5)	NOVEMBER
Cadmium	10.00	DECEMBER
Cadmium	16.67 (4)	JANUARY
Cadmium	100.00 (2)(5)	FEBRUARY
Cadmium	(4)(5)	MARCH
Chloroaniline (6)	(5)	JUNE
Chloroaniline (6)	(5)	JULY
Chloroaniline (6)	(5)	OCTOBER

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SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS PRIMARY

PARAMETER	REMOVAL (%)	MONTH
Chlorobenzene	-122.22 (4)	MAY
Chlorobenzene	(4)(5)	JUNE
Chlorobenzene	(4)(5)	JULY
Chlorobenzene	(4)(5)	SEPTEMBER
Chlorobenzene	50.00 (4)	DECEMBER
Chlorobenzene	-66.67 (4)	JANUARY
Chlorobenzene	-66.67 (4)	FEBRUARY
Chlorobenzene	16.67 (4)	MARCH
Chlorobenzene	40.00 (4)	APRIL
Chloroform	0.00 (3)(4)	MAY
Chloroform	20.00 (4)	JUNE
Chloroform	0.00 (3)(4)	JULY
Chloroform	0.00 (3)(4)	AUGUST
Chloroform	-33.33 (4)	SEPTEMBER
Chloroform	-9.09 (4)	OCTOBER
Chloroform	8.33 (4)	NOVEMBER
Chloroform	8.33 (4)	DECEMBER
Chloroform	11.11 (4)	JANUARY
Chloroform	-266.67 (4)	FEBRUARY
Chloroform	-23.81 (4)	MARCH
Chloroform	0.00 (3)(4)	APRIL
Chromium, Hexavalent	100.00 (2)	JANUARY
Chromium, Total	100.00 (2)(4)	MAY
Chromium, Total	32.58 (4)	JUNE
Chromium, Total	67.74 (4)	JULY
Chromium, Total	41.35	AUGUST
Chromium, Total	44.50	SEPTEMBER
Chromium, Total	42.31 (4)	OCTOBER
Chromium, Total	47.17 (4)	NOVEMBER
Chromium, Total	10.00 (4)	DECEMBER
Chromium, Total	38.98	JANUARY
Chromium, Total	74.84	FEBRUARY
Chromium, Total	(4)(5)	MARCH
Chromium, Total	94.21 (4)	APRIL

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APPENDIX C-2

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS PRIMARY

PARAMETER	REMOVAL (%)	MONTH
Chromium, Trivalent	100.00 (2)(4)	MAY
Chromium, Trivalent	32.58 (4)	JUNE
Chromium, Trivalent	67.74 (4)	JULY
Chromium, Trivalent	41.67	AUGUST
Chromium, Trivalent	44.50	SEPTEMBER
Chromium, Trivalent	42.31 (4)	OCTOBER
Chromium, Trivalent	47.17 (4)	NOVEMBER
Chromium, Trivalent	10.00 (4)	DECEMBER
Chromium, Trivalent	-300.00	JANUARY
Chromium, Trivalent	74.84	FEBRUARY
Chromium, Trivalent	94.21 (4)	APRIL
Copper	17.14	MAY
Copper	-375.00 (4)	JUNE
Copper	25.00	JULY
Copper	33.33 (4)	AUGUST
Copper	61.11 (4)	SEPTEMBER
Copper	39.47 (4)	OCTOBER
Copper	38.46	NOVEMBER
Copper	20.51 (4)	DECEMBER
Copper	3.33	JANUARY
Copper	36.67 (4)	FEBRUARY
Copper	-4.65 (4)	MARCH
Copper	100.00 (2)	APRIL
Di-n-butylphthalate	25.00 (4)	JUNE
Di-n-butylphthalate	100.00 (2)(4)	AUGUST
Di-n-butylphthalate	0.00 (3)(4)	SEPTEMBER
Di-n-butylphthalate	(4)(5)	NOVEMBER
Di-n-butylphthalate	0.00 (3)(4)	DECEMBER
Di-n-butylphthalate	100.00 (2)(4)	JANUARY
Di-n-butylphthalate	60.00 (4)	FEBRUARY
Di-n-butylphthalate	-33.33 (4)	MARCH
Di-n-butylphthalate	0.00 (3)(4)	APRIL
Dichlorobenzene (6)	29.63 (4)	JULY
Dichlorobenzene (6)	-42.11 (4)	DECEMBER
Dichlorobenzene (6)	100.00 (2)(4)	JANUARY
Dichlorobenzene (6)	-50.00 (4)	APRIL
Ethylbenzene	-28.57 (4)	MAY

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APPENDIX C-2

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS PRIMARY

PARAMETER	REMOVAL (%)	MONTH
Ethylbenzene	60.00 (4)	JUNE
Ethylbenzene	23.81 (4)	JULY
Ethylbenzene	0.00 (3)(4)	AUGUST
Ethylbenzene	-108.33 (4)	SEPTEMBER
Ethylbenzene	56.10 (4)	OCTOBER
Ethylbenzene	-56.25 (4)	NOVEMBER
Ethylbenzene	26.67	DECEMBER
Ethylbenzene	30.00 (4)	JANUARY
Ethylbenzene	-125.00 (4)	FEBRUARY
Ethylbenzene	-66.67	MARCH
Ethylbenzene	-37.04 (4)	APRIL
Fluoride	-80.77	MAY
Fluoride	0.00 (3)	JUNE
Fluoride	-12.82	JULY
Fluoride	-14.71	AUGUST
Fluoride	-5.41	SEPTEMBER
Fluoride	15.63	OCTOBER
Fluoride	0.00 (3)	NOVEMBER
Fluoride	-8.33	DECEMBER
Fluoride	4.25	JANUARY
Fluoride	0.00 (3)	FEBRUARY
Fluoride	12.20	MARCH
Fluoride	0.00 (3)	APRIL
Iron	78.45	MAY
Iron	75.98	JUNE
Iron	75.83	JULY
Iron	65.01	AUGUST
Iron	85.02	SEPTEMBER
Iron	55.19	OCTOBER
Iron	78.53	NOVEMBER
Iron	41.08	DECEMBER
Iron	63.72	JANUARY
Iron	68.42	FEBRUARY
Iron	76.32	MARCH
Iron	93.48	APRIL

APPENDIX C-2

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS PRIMARY

PARAMETER	REMOVAL (%)	MONTH
Lead	57.14	MAY
Lead	57.50	JUNE
Lead	61.91	JULY
Lead	100.00	AUGUST
Lead	100.00	SEPTEMBER
Lead	34.38	OCTOBER
Lead	74.60	NOVEMBER
Lead	44.83	DECEMBER
Lead	28.57	FEBRUARY
Lead	100.00 (2)	MARCH
Lead	52.38	APRIL
Manganese	22.14	MAY
Manganese	23.27	JUNE
Manganese	22.76	JULY
Manganese	24.89	AUGUST
Manganese	43.48	SEPTEMBER
Manganese	25.00	OCTOBER
Manganese	49.32	NOVEMBER
Manganese	26.62	DECEMBER
Manganese	36.64	JANUARY
Manganese	21.82	FEBRUARY
Manganese	26.67	MARCH
Manganese	80.83	APRIL
Mercury	(5)	OCTOBER
Mercury	100.00 (2)	DECEMBER
Mercury	100.00 (2)(4)	MARCH
Methylene Chloride	0.00 (3)(4)	MAY
Methylene Chloride	16.67 (4)	JUNE
Methylene Chloride	40.00 (4)	AUGUST
Methylene Chloride	-218.18	OCTOBER
Methylene Chloride	-14.63	DECEMBER
Methylene Chloride	(4)(5)	JANUARY
Methylene Chloride	50.00 (4)	FEBRUARY
Methylene Chloride	-23.08 (4)	MARCH
Methylene Chloride	76.56 (4)	APRIL

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APPENDIX C-2
SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS PRIMARY

PARAMETER	REMOVAL (%)	MONTH
Naphthalene	0.00 (2)(4)	JANUARY
Naphthalene	10.53 (4)	APRIL
Nickel	17.86	MAY
Nickel	(4)(5)	JUNE
Nickel	25.00 (4)	JULY
Nickel	35.29 (4)	SEPTEMBER
Nickel	2.50 (4)	OCTOBER
Nickel	100.00 (2)(4)	NOVEMBER
Nickel	-13.64 (4)	DECEMBER
Nickel	-76.92 (4)	JANUARY
Nickel	9.09 (4)	FEBRUARY
Nickel	(4)(5)	MARCH
Nickel	100.00 (2)	APRIL
Oil and Grease	50.00	MAY
Oil and Grease	42.86	JUNE
Oil and Grease	62.86	JULY
Oil and Grease	-22.58	AUGUST
Oil and Grease	32.14	SEPTEMBER
Oil and Grease	25.00	OCTOBER
Oil and Grease	28.57	NOVEMBER
Oil and Grease	19.36	DECEMBER
Oil and Grease	55.00	JANUARY
Oil and Grease	44.44	FEBRUARY
Oil and Grease	30.77	MARCH
Oil and Grease	73.53	APRIL
Phenol	100.00 (2)(4)	MAY
Phenol	14.29 (4)	JUNE
Phenol	30.00 (4)	AUGUST
Phenol	23.53 (4)	SEPTEMBER
Phenol	0.00 (3)(4)	OCTOBER
Phenol	6.25 (4)	NOVEMBER
Phenol	5.88 (4)	DECEMBER
Phenol	22.22 (4)	JANUARY
Phenol	100.00 (2)(4)	FEBRUARY
Phenol	15.39 (4)	MARCH
Phenol	43.75 (4)	APRIL
Phenolics	-41.07	MAY

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SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES

REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS PRIMARY

PARAMETER	REMOVAL (%)	MONTH
Phenolics	-106.67	JUNE
Phenolics	60.83	JULY
Phenolics	30.11	AUGUST
Phenolics	1.22	SEPTEMBER
Phenolics	-21.15	OCTOBER
Phenolics	-740.00	NOVEMBER
Phenolics	17.39	DECEMBER
Phenolics	-2.13	JANUARY
Phenolics	89.29	FEBRUARY
Phenolics	0.00	MARCH
Phenolics	37.50	APRIL
Sulfates	21.59	MAY
Sulfates	11.11	JUNE
Sulfates	2.94	JULY
Sulfates	2.90	AUGUST
Sulfates	-2.04	SEPTEMBER
Sulfates	9.09	OCTOBER
Sulfates	28.57	NOVEMBER
Sulfates	7.00	DECEMBER
Sulfates	9.09	JANUARY
Sulfates	12.86	FEBRUARY
Sulfates	1.89	MARCH
Sulfates	29.07	APRIL
TDS	0.00 (3)	MAY
TDS	0.00 (3)	JUNE
TDS	0.00 (3)	JULY
TDS	0.00 (3)	AUGUST
TDS	0.00 (3)	SEPTEMBER
TDS	5.88	OCTOBER
TDS	6.67	NOVEMBER
TDS	7.14	DECEMBER
TDS	0.00	JANUARY
TDS	6.67	FEBRUARY
TDS	0.00 (3)	MARCH
TDS	0.00 (3)	APRIL

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SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES

REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS PRIMARY

PARAMETER	REMOVAL (%)	MONTH
Toluene	-8.33 (4)	MAY
Toluene	57.14 (4)	JUNE
Toluene	0.00 (3)(4)	JULY
Toluene	-16.67 (4)	AUGUST
Toluene	-40.00 (4)	SEPTEMBER
Toluene	38.09 (4)	OCTOBER
Toluene	-42.86 (4)	NOVEMBER
Toluene	12.50	DECEMBER
Toluene	0.00 (3)(4)	JANUARY
Toluene	-220.00 (4)	FEBRUARY
Toluene	40.68	MARCH
Toluene	10.00 (4)	APRIL
Xylene	-25.76	MAY
Xylene	55.45	JUNE
Xylene	22.68	JULY
Xylene	-3.03	AUGUST
Xylene	-100.00	SEPTEMBER
Xylene	53.53	OCTOBER
Xylene	-57.90	NOVEMBER
Xylene	22.73	DECEMBER
Xylene	12.73	JANUARY
Xylene	-350.00	FEBRUARY
Xylene	-53.85	MARCH
Xylene	-61.29	APRIL
Zinc	34.39	MAY
Zinc	-525.95	JUNE
Zinc	63.00	JULY
Zinc	55.88	AUGUST
Zinc	69.88	SEPTEMBER
Zinc	43.23	OCTOBER
Zinc	57.90	NOVEMBER
Zinc	50.98	DECEMBER
Zinc	-94.05	JANUARY
Zinc	18.87	FEBRUARY
Zinc	23.00	MARCH
Zinc	72.31	APRIL

APPENDIX C-2

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS PRIMARY

(1) Only those parameters detected in the process during the month indicated are listed here.

(2) 100.00% removal indicates the parameter was detected in the influent but not in the effluent.

(3) 0.00% removal indicates the parameter was detected in the process influent and effluent at the same concentration.

(4) Influent and/or effluent concentrations were at or near method detection limits.

(5) Detected in process effluent but undetected in process influent.

(6) The isomer of this compound was not specified. The concentrations of all detects of this tentatively identified compound were summed for a given month to calculate removals for the compound. Refer to the specific isomer of interest for more reliable data.

APPENDIX C-3

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX C-3

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER (1)	REMOVAL (%)	MONTH
1,1,1-Trichloroethane	100.00 (2)	AUGUST
1,1,1-Trichloroethane	(4)(5)	OCTOBER
1,1,1-Trichloroethane	95.30	DECEMBER
1,1,1-Trichloroethane	100.00 (2)(4)	FEBRUARY
1,1,1-Trichloroethane	100.00 (2)(4)	MARCH
1,2-Dichlorobenzene	67.59	MAY
1,2-Dichlorobenzene	88.79	JUNE
1,2-Dichlorobenzene	86.54	JULY
1,2-Dichlorobenzene	86.30	AUGUST
1,2-Dichlorobenzene	84.98	SEPTEMBER
1,2-Dichlorobenzene	89.33 (4)	OCTOBER
1,2-Dichlorobenzene	60.18	NOVEMBER
1,2-Dichlorobenzene	62.45	DECEMBER
1,2-Dichlorobenzene	59.12 (4)	JANUARY
1,2-Dichlorobenzene	35.50	FEBRUARY
1,2-Dichlorobenzene	59.12	MARCH
1,2-Dichlorobenzene	89.32 (4)	APRIL
1,3-Dichlorobenzene	100.00 (2)(4)	JULY
1,3-Dichlorobenzene	100.00 (2)(4)	AUGUST
1,3-Dichlorobenzene	100.00 (2)(4)	SEPTEMBER
1,3-Dichlorobenzene	100.00 (2)(4)	OCTOBER
1,3-Dichlorobenzene	100.00 (2)(4)	NOVEMBER
1,4-Dichlorobenzene	69.95	MAY
1,4-Dichlorobenzene	86.69	JUNE
1,4-Dichlorobenzene	85.70	JULY
1,4-Dichlorobenzene	88.54	AUGUST
1,4-Dichlorobenzene	90.00	SEPTEMBER
1,4-Dichlorobenzene	100.00 (2)	OCTOBER
1,4-Dichlorobenzene	64.94	NOVEMBER
1,4-Dichlorobenzene	100.00 (2)	DECEMBER
1,4-Dichlorobenzene	69.44	JANUARY
1,4-Dichlorobenzene	42.16	FEBRUARY
1,4-Dichlorobenzene	67.54	MARCH
1,4-Dichlorobenzene	88.09	APRIL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX C-3
SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
2,4-Dichlorophenol	100.00 (2)(4)	JULY
2,4-Dichlorophenol	100.00 (2)(4)	AUGUST
2,4-Dichlorophenol	100.00 (2)(4)	OCTOBER
2,4-Dichlorophenol	100.00 (2)(4)	JANUARY
2,4-Dichlorophenol	100.00 (2)(4)	FEBRUARY
2-Butanone	100.00 (2)(4)	AUGUST
2-Butanone	-118.52 (4)	OCTOBER
2-Butanone	98.90	DECEMBER
2-Chlorophenol	(4)(5)	MARCH
2-Chlorophenol	38.03	JUNE
2-Chlorophenol	-22.53 (4)	JULY
2-Chlorophenol	100.00 (2)(4)	AUGUST
2-Chlorophenol	78.00 (4)	SEPTEMBER
2-Chlorophenol	86.00 (4)	OCTOBER
2-Chlorophenol	41.79 (4)	NOVEMBER
2-Chlorophenol	(4)(5)	DECEMBER
2-Chlorophenol	100.00 (2)	JANUARY
2-Chlorophenol	(4)(5)	MARCH
2-Nitroaniline	-1.54	MAY
2-Nitroaniline	40.46	JUNE
2-Nitroaniline	76.98	JULY
2-Nitroaniline	64.00	AUGUST
2-Nitroaniline	71.77	SEPTEMBER
2-Nitroaniline	78.18	OCTOBER
2-Nitroaniline	33.55	NOVEMBER
2-Nitroaniline	45.50	DECEMBER
2-Nitroaniline	50.69	JANUARY
2-Nitroaniline	-37.99	FEBRUARY
2-Nitroaniline	5.94	MARCH
2-Nitroaniline	78.88	APRIL
2-Nitrophenol	28.20	MAY
2-Nitrophenol	94.02	JUNE
2-Nitrophenol	100.00 (2)	JULY
2-Nitrophenol	97.16	AUGUST
2-Nitrophenol	96.83	SEPTEMBER
2-Nitrophenol	100.00 (2)	OCTOBER
2-Nitrophenol	87.63	NOVEMBER

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX C-3

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES

REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
2-Nitrophenol	92.80	DECEMBER
2-Nitrophenol	100.00 (2)	JANUARY
2-Nitrophenol	100.00 (2)	FEBRUARY
2-Nitrophenol	100.00 (2)	MARCH
2-Nitrophenol	100.00 (2)	APRIL
4-Chloroaniline	-84.61	MAY
4-Chloroaniline	100.00 (2)	JUNE
4-Chloroaniline	100.00 (2)	JULY
4-Chloroaniline	100.00 (2)	AUGUST
4-Chloroaniline	100.00 (2)	SEPTEMBER
4-Chloroaniline	81.54	OCTOBER
4-Chloroaniline	55.73	NOVEMBER
4-Chloroaniline	23.48	DECEMBER
4-Chloroaniline	13.71	JANUARY
4-Chloroaniline	100.00 (2)	MARCH
4-Chloroaniline	100.00 (2)	APRIL
4-Methyl-2-Pentanone	100.00 (2)	MAY
4-Methyl-2-Pentanone	100.00 (2)	JUNE
4-Methyl-2-Pentanone	-669.23 (4)	SEPTEMBER
4-Methyl-2-Pentanone	100.00 (2)	NOVEMBER
4-Methyl-2-Pentanone	100.00 (2)	DECEMBER
4-Nitroaniline	30.52	MAY
4-Nitroaniline	100.00 (2)	JUNE
4-Nitroaniline	98.90	JULY
4-Nitroaniline	100.00 (2)	AUGUST
4-Nitroaniline	100.00 (2)	SEPTEMBER
4-Nitroaniline	79.55	OCTOBER
4-Nitroaniline	84.50	NOVEMBER
4-Nitroaniline	85.42	DECEMBER
4-Nitroaniline	38.36	JANUARY
4-Nitroaniline	7.46	FEBRUARY
4-Nitroaniline	97.36	MARCH
4-Nitroaniline	100.00 (2)	APRIL

APPENDIX C-3
SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
4-Nitrophenol	100.00 (2)	MAY
4-Nitrophenol	100.00 (2)	JUNE
4-Nitrophenol	76.17	JULY
4-Nitrophenol	88.71	AUGUST
4-Nitrophenol	94.21	SEPTEMBER
4-Nitrophenol	96.90	OCTOBER
4-Nitrophenol	38.93	NOVEMBER
4-Nitrophenol	62.74	DECEMBER
4-Nitrophenol	0.90	JANUARY
4-Nitrophenol	97.96	FEBRUARY
4-Nitrophenol	100.00 (2)	MARCH
4-Nitrophenol	94.31	APRIL
Acetone	100.00 (2)	MAY
Acetone	100.00 (2)	JUNE
Acetone	99.92 (4)	JULY
Acetone	99.78 (4)	AUGUST
Acetone	100.00 (2)	SEPTEMBER
Acetone	98.02	OCTOBER
Acetone	99.25 (4)	NOVEMBER
Acetone	97.09	DECEMBER
Acetone	86.85	JANUARY
Acetone	55.19	FEBRUARY
Acetone	99.43 (4)	MARCH
Acetone	99.79 (4)	APRIL
Alachlor	-7.49	MAY
Alachlor	100.00 (2)(4)	FEBRUARY
Alachlor	10.12 (4)	APRIL
Aniline	72.02	MAY
Aniline	100.00 (2)	JUNE
Aniline	100.00 (2)	JULY
Aniline	100.00 (2)	AUGUST
Aniline	100.00 (2)	SEPTEMBER
Aniline	94.23	OCTOBER

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APPENDIX C-3

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES

REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
Aniline	100.00 (2)	NOVEMBER
Aniline	67.20	DECEMBER
Aniline	96.48	JANUARY
Aniline	97.22	FEBRUARY
Aniline	100.00 (2)	MARCH
Aniline	100.00 (2)	APRIL
Arsenic	(4)(5)	MAY
Arsenic	-21.81	JUNE
Arsenic	-51.13	JULY
Arsenic	-57.65	AUGUST
Arsenic	-12.00	SEPTEMBER
Arsenic	18.24	OCTOBER
Arsenic	(4)(5)	NOVEMBER
Arsenic	57.95 (4)	DECEMBER
Arsenic	1.32	JANUARY
Arsenic	13.40	FEBRUARY
Arsenic	-95.89	MARCH
Arsenic	-57.95	APRIL
Atrazine	100.00	DECEMBER
Atrazine	15.88	JANUARY
Atrazine	10.12 (4)	APRIL
Barium	49.22 (4)	MAY
Barium	38.21 (4)	JUNE
Barium	36.97 (4)	JULY
Barium	41.35 (4)	AUGUST
Barium	100.00 (2)	SEPTEMBER
Barium	38.46 (4)	OCTOBER
Barium	27.91 (4)	NOVEMBER
Barium	31.81 (4)	DECEMBER
Barium	100.00 (2)	JANUARY
Barium	58.83 (4)	FEBRUARY
Barium	100.00 (2)	MARCH
Barium	77.81 (4)	APRIL

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APPENDIX C-3

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
Benzene	83.14	MAY
Benzene	100.00 (2)	JUNE
Benzene	100.00 (2)	JULY
Benzene	100.00 (2)	AUGUST
Benzene	97.08	SEPTEMBER
Benzene	98.93	OCTOBER
Benzene	99.83 (4)	NOVEMBER
Benzene	98.00	DECEMBER
Benzene	97.97	JANUARY
Benzene	97.44	FEBRUARY
Benzene	100.00 (2)	MARCH
Benzene	100.00 (2)	APRIL
Bis(2-Ethylhexyl)Phthalate	-90.60 (4)	JUNE
Bis(2-Ethylhexyl)Phthalate	-135.04 (4)	JULY
Bis(2-Ethylhexyl)Phthalate	61.36 (4)	AUGUST
Bis(2-Ethylhexyl)Phthalate	67.65 (4)	SEPTEMBER
Bis(2-Ethylhexyl)Phthalate	63.33 (4)	OCTOBER
Bis(2-Ethylhexyl)Phthalate	100.00 (2)(4)	NOVEMBER
Bis(2-Ethylhexyl)Phthalate	100.00 (2)(4)	DECEMBER
Bis(2-Ethylhexyl)Phthalate	100.00 (2)(4)	JANUARY
Bis(2-Ethylhexyl)Phthalate	84.37 (4)	FEBRUARY
Bis(2-Ethylhexyl)Phthalate	-75.58 (4)	MARCH
Bis(2-Ethylhexyl)Phthalate	-19.84 (4)	APRIL
Boron	-8.32	MAY
Boron	15.92	JUNE
Boron	6.78	JULY
Boron	14.51	AUGUST
Boron	6.99	SEPTEMBER
Boron	-16.81	OCTOBER
Boron	2.28	NOVEMBER
Boron	0.34	DECEMBER
Boron	17.50	JANUARY
Boron	5.29	FEBRUARY
Boron	15.44	MARCH
Boron	-5.02	APRIL
Butoxyethoxyethanol	(5)	MAY

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APPENDIX C-3

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES

REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
Butylbenzylphthalate	100.00 (2)(4)	JUNE
Butylbenzylphthalate	100.00 (2)(4)	JULY
Butylbenzylphthalate	100.00 (2)(4)	AUGUST
Butylbenzylphthalate	100.00 (2)(4)	SEPTEMBER
Butylbenzylphthalate	100.00 (2)(4)	OCTOBER
Butylbenzylphthalate	100.00 (2)(4)	NOVEMBER
Butylbenzylphthalate	100.00 (2)(4)	DECEMBER
Butylbenzylphthalate	100.00 (2)(4)	JANUARY
Butylbenzylphthalate	100.00 (2)(4)	FEBRUARY
Butylbenzylphthalate	100.00 (2)(4)	MARCH
Butylbenzylphthalate	100.00 (2)(4)	APRIL
COD	-44.70	MAY
COD	50.32	JUNE
COD	74.43	JULY
COD	98.17 (4)	AUGUST
COD	77.78 (4)	SEPTEMBER
COD	68.74	OCTOBER
COD	58.33	NOVEMBER
COD	63.04	DECEMBER
COD	42.39	JANUARY
COD	73.18	FEBRUARY
COD	70.37	MARCH
COD	60.11	APRIL
Cadmium	100.00 (2)	MAY
Cadmium	91.89 (4)	JUNE
Cadmium	69.02 (4)	JULY
Cadmium	100.00 (2)	AUGUST
Cadmium	100.00 (2)	SEPTEMBER
Cadmium	84.53 (4)	OCTOBER
Cadmium	100.00 (2)	NOVEMBER
Cadmium	100.00 (2)	DECEMBER
Cadmium	100.00 (2)	JANUARY
Cadmium	51.72 (4)	FEBRUARY
Cadmium	100.00 (2)	MARCH

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APPENDIX C-3

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
Chloroaniline (7)	-90.64	MAY
Chloroaniline (7)	-109.66	JUNE
Chloroaniline (7)	-115.95	JULY
Chloroaniline (7)	(5)	AUGUST
Chloroaniline (7)	(5)	SEPTEMBER
Chloroaniline (7)	-247.83	OCTOBER
Chloroaniline (7)	-124.31	NOVEMBER
Chloroaniline (7)	-63.98	DECEMBER
Chloroaniline (7)	-146.55	JANUARY
Chloroaniline (7)	(5)	FEBRUARY
Chloroaniline (7)	18.24	MARCH
Chloroaniline (7)	87.12	APRIL
Chlorobenzene (6a)	64.84	MAY
Chlorobenzene (6b)	76.92	MAY
Chlorobenzene (6a)	97.05	JUNE
Chlorobenzene (6b)	98.75 (4)	JUNE
Chlorobenzene (6a)	97.93	JULY
Chlorobenzene (6b)	95.62	JULY
Chlorobenzene (6a)	99.68 (4)	AUGUST
Chlorobenzene (6b)	100.00 (2)	AUGUST
Chlorobenzene (6a)	91.83	SEPTEMBER
Chlorobenzene (6b)	92.09	SEPTEMBER
Chlorobenzene (6a)	97.14	OCTOBER
Chlorobenzene (6b)	100.00 (2)	OCTOBER
Chlorobenzene (6a)	97.54	NOVEMBER
Chlorobenzene (6b)	75.92	NOVEMBER
Chlorobenzene (6a)	89.64	DECEMBER
Chlorobenzene (6b)	84.38	DECEMBER
Chlorobenzene (6a)	88.76	JANUARY
Chlorobenzene (6b)	100.00 (2)	JANUARY
Chlorobenzene (6a)	83.22	FEBRUARY
Chlorobenzene (6b)	72.24	FEBRUARY
Chlorobenzene (6a)	95.39	MARCH
Chlorobenzene (6b)	100.00 (2)	MARCH
Chlorobenzene (6a)	100.00 (2)	APRIL
Chlorobenzene (6b)	100.00 (2)	APRIL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX C-3

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES

REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
Chloroform	100.00 (2)(4)	MAY
Chloroform	-1.95 (4)	JUNE
Chloroform	-112.00 (4)	JULY
Chloroform	-25.00 (4)	AUGUST
Chloroform	100.00 (2)(4)	SEPTEMBER
Chloroform	100.00 (2)(4)	OCTOBER
Chloroform	-62.61 (4)	NOVEMBER
Chloroform	-34.03 (4)	DECEMBER
Chloroform	-15.66 (4)	JANUARY
Chloroform	-63.20 (4)	FEBRUARY
Chloroform	-16.88	MARCH
Chloroform	10.12	APRIL
Chloronitrobenzene (7)	48.48	MAY
Chloronitrobenzene (7)	88.91	JUNE
Chloronitrobenzene (7)	89.38	JULY
Chloronitrobenzene (7)	85.13	AUGUST
Chloronitrobenzene (7)	85.91	SEPTEMBER
Chloronitrobenzene (7)	91.08	OCTOBER
Chloronitrobenzene (7)	84.22	NOVEMBER
Chloronitrobenzene (7)	89.71	DECEMBER
Chloronitrobenzene (7)	86.24	JANUARY
Chloronitrobenzene (7)	67.00	FEBRUARY
Chloronitrobenzene (7)	86.12	MARCH
Chloronitrobenzene (7)	91.94	APRIL
Chromium, Total	100.00 (2)	JUNE
Chromium, Total	100.00 (2)(4)	JULY
Chromium, Total	100.00 (2)	AUGUST
Chromium, Total	93.74 (4)	SEPTEMBER
Chromium, Total	100.00 (2)	OCTOBER
Chromium, Total	100.00 (2)	NOVEMBER
Chromium, Total	29.80 (4)	DECEMBER
Chromium, Total	84.81 (4)	JANUARY
Chromium, Total	100.00 (2)	FEBRUARY
Chromium, Total	63.65 (4)	MARCH
Chromium, Total	100.00 (2)	APRIL

APPENDIX C-3

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES

REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
Chromium, Trivalent	100.00 (2)	JUNE
Chromium, Trivalent	100.00 (2)(4)	JULY
Chromium, Trivalent	100.00 (2)	AUGUST
Chromium, Trivalent	93.74 (4)	SEPTEMBER
Chromium, Trivalent	100.00 (2)	OCTOBER
Chromium, Trivalent	100.00 (2)	NOVEMBER
Chromium, Trivalent	29.80 (4)	DECEMBER
Chromium, Trivalent	84.81 (4)	JANUARY
Chromium, Trivalent	100.00 (2)	FEBRUARY
Chromium, Trivalent	(4)(5)	MARCH
Chromium, Trivalent	100.00 (2)	APRIL
Copper	36.17 (4)	MAY
Copper	90.06 (4)	JUNE
Copper	100.00 (2)	JULY
Copper	77.42 (4)	AUGUST
Copper	100.00 (2)	SEPTEMBER
Copper	52.71 (4)	OCTOBER
Copper	100.00 (2)	NOVEMBER
Copper	62.87 (4)	DECEMBER
Copper	50.19 (4)	JANUARY
Copper	72.30 (4)	FEBRUARY
Copper	49.02 (4)	MARCH
Copper	39.45 (4)(8)	APRIL
Cyanides, total	(4)(5)	OCTOBER
Cyanides, total	(4)(5)	NOVEMBER
Cyanides, total	(4)(5)	DECEMBER
Cyanides, total	(4)(5)	JANUARY
Cyanides, total	(4)(5)	FEBRUARY
Cyanides, total	-466.04	MARCH
Cyanides, total	(4)(5)	APRIL
Di-n-Butylphthalate	100.00 (2)(4)	JUNE
Di-n-Butylphthalate	100.00 (2)(4)	SEPTEMBER
Di-n-Butylphthalate	100.00 (2)(4)	NOVEMBER
Di-n-Butylphthalate	100.00 (2)(4)	DECEMBER
Di-n-Butylphthalate	100.00 (2)(4)	FEBRUARY
Di-n-Butylphthalate	57.79 (4)	MARCH
Di-n-Butylphthalate	100.00 (2)(4)	APRIL

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APPENDIX C-3
SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
Dichlorobenzene (7)	88.49	JULY
Dichlorobenzene (7)	(5)	AUGUST
Dichlorobenzene (7)	(5)	OCTOBER
Dichlorobenzene (7)	72.89	DECEMBER
Dichlorobenzene (7)	100.00 (2)	JANUARY
Dichlorobenzene (7)	(5)	FEBRUARY
Dichlorobenzene (7)	87.74	MARCH
Dichlorobenzene (7)	-139.68 (4)	APRIL
Ethoxybenzenamine	(5)	MAY
Ethylbenzene	85.01	MAY
Ethylbenzene	99.67 (4)	JUNE
Ethylbenzene	99.56 (4)	JULY
Ethylbenzene (6a)	100.00 (2)	AUGUST
Ethylbenzene (6b)	100.00 (2)	AUGUST
Ethylbenzene	76.83	OCTOBER
Ethylbenzene	98.48 (4)	NOVEMBER
Ethylbenzene	89.48	DECEMBER
Ethylbenzene	100.00 (2)	JANUARY
Ethylbenzene	98.71 (4)	FEBRUARY
Ethylbenzene	98.73 (4)	MARCH
Ethylbenzene	97.65 (4)	APRIL
Fluoride	-40.02	MAY
Fluoride	-27.00	JUNE
Fluoride	-35.98	JULY
Fluoride	-87.57	AUGUST
Fluoride	24.00	SEPTEMBER
Fluoride	5.49	OCTOBER
Fluoride	0.00 (3)	NOVEMBER
Fluoride	-0.61	DECEMBER
Fluoride	-3.56	JANUARY
Fluoride	26.20	FEBRUARY
Fluoride	-12.68	MARCH
Fluoride	1.32	APRIL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX C-3

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES

REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
Iron	64.88	MAY
Iron	84.91	JUNE
Iron	82.85	JULY
Iron	86.37	AUGUST
Iron	83.56	SEPTEMBER
Iron	84.80	OCTOBER
Iron	76.57	NOVEMBER
Iron	49.18	DECEMBER
Iron	69.72	JANUARY
Iron	83.05	FEBRUARY
Iron	72.70	MARCH
Iron	77.43	APRIL
Lead	25.70	MAY
Lead	100.00 (2)	JUNE
Lead	100.00 (2)	JULY
Lead	100.00 (2)	SEPTEMBER
Lead	66.91	OCTOBER
Lead	57.37	NOVEMBER
Lead	68.24	DECEMBER
Lead	100.00 (2)	FEBRUARY
Lead	(5)	MARCH
Lead	100.00 (2)	APRIL
Manganese	6.67	MAY
Manganese	8.71	JUNE
Manganese	-42.33	JULY
Manganese	4.46	AUGUST
Manganese	-2.91	SEPTEMBER
Manganese	24.68	OCTOBER
Manganese	6.29	NOVEMBER
Manganese	-2.43	DECEMBER
Manganese	16.53	JANUARY
Manganese	13.25	FEBRUARY
Manganese	25.70	MARCH
Manganese	-49.27	APRIL
Mercury	100.00 (2)	OCTOBER
Mercury	100.00 (2)	DECEMBER

APPENDIX C-3

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
Methylene Chloride	100.00 (2)(4)	MAY
Methylene Chloride	-2102.08 (4)	JUNE
Methylene Chloride	(4)(5)	JULY
Methylene Chloride	99.21 (4)	AUGUST
Methylene Chloride	96.40	SEPTEMBER
Methylene Chloride	90.22	OCTOBER
Methylene Chloride	(4)(5)	NOVEMBER
Methylene Chloride	94.30	DECEMBER
Methylene Chloride	-160.28 (4)	JANUARY
Methylene Chloride	80.52 (4)	FEBRUARY
Methylene Chloride	93.82	MARCH
Methylene Chloride	96.87	APRIL
Naphthalene	100.00 (2)(4)	JULY
Naphthalene	100.00 (2)(4)	SEPTEMBER
Naphthalene	100.00 (2)(4)	OCTOBER
Naphthalene	100.00 (2)(4)	NOVEMBER
Naphthalene	100.00 (2)(4)	JANUARY
Naphthalene	(4)(5)	FEBRUARY
Naphthalene	100.00 (2)(4)	MARCH
Naphthalene (6a)	(4)(5)	APRIL
Naphthalene (6b)	100.00 (2)(4)	APRIL
Nickel	-5.13	MAY
Nickel	39.62	JUNE
Nickel	22.98	JULY
Nickel	42.64	AUGUST
Nickel	-9.96	SEPTEMBER
Nickel	37.04	OCTOBER
Nickel	11.10	NOVEMBER
Nickel	30.59	DECEMBER
Nickel	45.77	JANUARY
Nickel	24.05	FEBRUARY
Nickel	-1.37	MARCH
Nickel	-15.08	APRIL

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APPENDIX C-3
SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
Nitrobenzene	79.58 (4)	JULY
Nitrobenzene	87.75 (4)	AUGUST
Nitrobenzene	84.38 (4)	SEPTEMBER
Nitrobenzene	100.00 (2)	OCTOBER
Nitrobenzene	100.00 (2)	NOVEMBER
Nitrobenzene	100.00 (2)	DECEMBER
Nitrobenzene	56.09 (4)	JANUARY
Nitrobenzene	62.14 (4)	FEBRUARY
Nitrobenzene	68.35 (4)	MARCH
Nitrobenzene	88.73 (4)	APRIL
Oil and Grease	-159.74	MAY
Oil and Grease	42.70	JUNE
Oil and Grease	100.00 (2)	JULY
Oil and Grease	100.00 (2)	AUGUST
Oil and Grease	84.61	SEPTEMBER
Oil and Grease	70.07	OCTOBER
Oil and Grease	70.13	NOVEMBER
Oil and Grease	76.43	DECEMBER
Oil and Grease	57.47	JANUARY
Oil and Grease	79.13	FEBRUARY
Oil and Grease	63.35	MARCH
Oil and Grease	100.00 (2)	APRIL
Phenol	100.00 (2)(4)	JUNE
Phenol	100.00 (2)(4)	JULY
Phenol	100.00 (2)(4)	AUGUST
Phenol	100.00 (2)(4)	SEPTEMBER
Phenol	100.00 (2)(4)	OCTOBER
Phenol	100.00 (2)(4)	NOVEMBER
Phenol	100.00 (2)(4)	DECEMBER
Phenol	100.00 (2)(4)	JANUARY
Phenol	100.00 (2)(4)	FEBRUARY
Phenol	100.00 (2)(4)	MARCH
Phenol	100.00 (2)(4)	APRIL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX C-3
SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
Phenolics	47.84	MAY
Phenolics	81.24	JUNE
Phenolics	85.61	JULY
Phenolics	85.59	AUGUST
Phenolics	81.03	SEPTEMBER
Phenolics	84.00	OCTOBER
Phenolics	76.60	NOVEMBER
Phenolics	82.76	DECEMBER
Phenolics	52.31	JANUARY
Phenolics	79.23	FEBRUARY
Phenolics	100.00 (2)	MARCH
Phenolics	74.36	APRIL
Selenium	100.00 (2)	NOVEMBER
Sulfates	-9.49	MAY
Sulfates	17.19	JUNE
Sulfates	-9.06	JULY
Sulfates	-1.27	AUGUST
Sulfates	-9.71	SEPTEMBER
Sulfates	-8.28	OCTOBER
Sulfates	14.00	NOVEMBER
Sulfates	-5.30	DECEMBER
Sulfates	5.36	JANUARY
Sulfates	18.16	FEBRUARY
Sulfates	11.94	MARCH
Sulfates	18.17	APRIL
TDS	-0.91	MAY
TDS	14.53	JUNE
TDS	15.07	JULY
TDS	29.19	AUGUST
TDS	5.46	SEPTEMBER
TDS	10.05	OCTOBER
TDS	-2.21	NOVEMBER
TDS	-2.04	DECEMBER
TDS	3.63	JANUARY
TDS	12.49	FEBRUARY
TDS	13.98	MARCH
TDS	5.91	APRIL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX C-3
SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
Toluene	100.00 (2)	MAY
Toluene	100.00 (2)	JUNE
Toluene	99.28	JULY
Toluene	100.00 (2)	AUGUST
Toluene	100.00 (2)	SEPTEMBER
Toluene	100.00 (2)	OCTOBER
Toluene	100.00 (2)	NOVEMBER
Toluene	95.73	DECEMBER
Toluene	100.00 (2)	JANUARY
Toluene	93.14	FEBRUARY
Toluene	100.00 (2)	MARCH
Toluene	100.00 (2)	APRIL
Trichloroethene	98.20 (4)	APRIL
Xylene (6a)	79.89	MAY
Xylene (6b)	100.00 (2)	MAY
Xylene	99.02	JUNE
Xylene	98.97	JULY
Xylene	97.63	AUGUST
Xylene	94.97	SEPTEMBER
Xylene	93.42	OCTOBER
Xylene	96.96	NOVEMBER
Xylene	88.31	DECEMBER
Xylene	88.45	JANUARY
Xylene	85.82	FEBRUARY
Xylene	96.34	MARCH
Xylene	97.13	APRIL
Zinc	-44.91	MAY
Zinc	72.19	JUNE
Zinc	90.76 (4)	JULY
Zinc	58.37	AUGUST
Zinc	62.01	SEPTEMBER
Zinc	73.60	OCTOBER

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX C-3

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY

PARAMETER	REMOVAL (%)	MONTH
Zinc	33.14	NOVEMBER
Zinc	53.74	DECEMBER
Zinc	-0.73	JANUARY
Zinc	34.85	FEBRUARY
Zinc	56.49	MARCH
Zinc	-39.15	APRIL

(1) Only those parameters detected in the process during the month indicated are listed here.

(2) 100.00% removal indicates the parameter was detected in the influent but not in the effluent.

(3) 0.00% removal indicates the parameter was detected in the process influent and effluent at the same concentration.

(4) Influent and/or effluent concentrations were at or near method detection limits.

(5) Detected in process effluent but undetected in process influent.

(6) a) Detected in GCMS scan as a volatile compound during the month indicated.
b) Tentatively identified in semivolatile library search during the month indicated.
Only the volatile data (6a) has been used in the calculation of the median removal efficiency.

(7) The isomer of this compound was not specified. The concentrations of all detects of this tentatively identified compound were summed for a given month to calculate removals for the compound. Refer to the specific isomer of interest for more reliable data.

APPENDIX C-3

SUMMARY OF WET PROCESS REMOVAL EFFICIENCIES
REMOVALS CALCULATED ACROSS AMERICAN BOTTOMS SECONDARY
FOR PARAMETERS INFLUENT TO THE SECONDARY PROCESS

(8) Calculated removal efficiency was -463.43 based on the data reported, however copper concentrations influent to the secondary process during this month were of questionable reliability due to their proximity to the method detection limit. The secondary influent is made up of the AB primary effluent (copper undetected in April) and the P-Chem effluent (0.022 mg/l). The typical detection limit for copper is 0.02 mg/l. If surrogate values were assigned to the primary and P-Chem effluents based on the average of the previous sampling events, the primary effluent surrogate concentration would be 0.05 mg/l and the surrogate for the P-Chem effluent would be 0.142 mg/l. Using these values in place of the near MDL and nondetects yields a calculated removal efficiency through the AB secondary process of 39.45%.

APPENDIX D

METHODOLOGY USED IN CALCULATION OF DECILES

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APPENDIX D

METHODOLOGY USED IN THE CALCULATION OF DECILES

A decile is similar to a data set median. A median divides an ordered data set into two equal parts; half the data set values are less than the median and half the data set values exceed the median. Deciles are similar, except they divide the data set into ten equal parts. Thus ten percent of the data set values are less than the first decile, twenty percent of the data set values are less than the second decile, and so on. The fifth decile is equivalent to the data set median.

In order to demonstrate the derivation of removal efficiency deciles, the removals calculated for 1,2-Dichlorobenzene across the American Bottoms secondary process will be used as an example.

First, the removals are sorted from smallest to greatest:

R_1	=	35.50%	February
R_2	=	59.12%	January, March
R_3	=	59.12%	January, March
R_4	=	60.18%	November
R_5	=	62.45%	December
R_6	=	67.59%	May
R_7	=	84.98%	September
R_8	=	86.30%	August
R_9	=	86.54%	July
R_{10}	=	88.79%	June
R_{11}	=	89.32%	April
R_{12}	=	89.33%	October

Deciles consist of the nine (N+1)/10th values of a sorted data set. thus, in this data set consisting of twelve removal efficiencies, every (12+1)/10 = 1.3rd removal efficiency is sought.

The first decile is the 1.3rd removal efficiency in the above list. This removal efficiency lies three tenths of the distance between the first (35.50%) and second (59.12%) removal efficiencies in the above list:

First decile = D1 = 35.50 + (0.3) (59.12 - 35.50) = 42.59%

The second decile is the 2 x 1.3 = 2.6th removal efficiency in the above list. The second decile lies six tenths of the distance between the second (59.12%) and third (59.12%) removal efficiencies in the above list:

Second decile = D2 = 59.12 + (0.6) (59.12 - 59.12) = 59.12%

The third decile is the 3 x 1.3 = 3.9th removal efficiency in the above list. The third decile lies nine tenths of the distance between the third (59.12%) and fourth (60.18%) removal efficiencies in the above list:

Third decile = D3 = 59.12 + (0.9) (60.18 - 59.12) = 60.07%

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APPENDIX D
METHODOLOGY USED IN THE CALCULATION OF DECILES

Similarly, all nine deciles can be derived:

D_1 = 42.59%
D_2 = 59.12%
D_3 = 60.07%
D_4 = 63.48%
D_5 = 76.29% (MEDIAN)
D_6 = 86.04%
D_7 = 86.76%
D_8 = 89.00%
D_9 = 89.33%

If less than twelve values are identified, the median corresponds to the middle value in the ranking for an odd number of values, or a value halfway between the middle two values for an even number. This is summarized in the following table:

Number of values identified (N)	(N+1)/2	Ranking at which median falls
11	6	6th value
10	5.5	average of 5th and 6th values
9	5	5th value
8	4.5	average of 4th and 5th values
7	4	4th value
6	3.5	average of 3rd and 4th values
5	3	3rd value
4	2.5	average of 2nd and 3rd values
3	2	2nd value
2	1.5	average of 1st and 2nd values
1	1	1st value

The median removals of each of the analyzed parameters for each of the processes is reflected in Tables 13 through 16 in the fate and effects report. These median values have been used as an estimate of the removal that can be expected for each pollutant.

CER 055616

APPENDIX E

DATA EVALUATION FOR TREATMENT PLANT ANALYSES

(Prepared by EA Engineering, Science, and Technology, Inc.)

DATA EVALUATION FOR
TREATMENT PLANT ANALYSES

Prepared for

Horner and Shifrin, Inc.

Prepared by

EA Mid-Atlantic Regional Operations
EA Engineering, Science, and Technology

January 1990

CONTENTS

List of Figure and Tables

1. INTRODUCTION

EA Engineering (EA) was retained to assist Horner and Shifrin with the data evaluation in relation to development of Sauget's pretreatment program. The review presented herein evaluated pollutant removal efficiencies and potential inhibitory levels by comparing the provided data to levels typically experienced in similar treatment systems. The goal of this evaluation was to determine if inconsistencies in analytical results can be identified, or if inconsistencies in treatment efficiency exist that could be improved by enforcement of appropriate pretreatment limits.

The database consisted of approximately one year (May 1988 to April 1989) of analytical data for 11 different sampling locations throughout the American Bottoms Regional Wastewater Treatment Facility (ABRWTF). Figure 1-1 identifies the 11 sampling locations. The data consists of priority pollutant scans for volatile, and semi-volatile compounds. A separate database for heavy metals and the conventional pollutants was developed and reviewed by Horner and Shifrin, Inc. and is not presented here. The data was collected on a monthly basis for all eleven locations. A total of 34 distinct parameters was analyzed and documented.

2. REMOVAL EFFICIENCY

2.1 COMPARISON TO THE WERL DATABASE

Table 2-1 is a list of the 34 chemical pollutants which were considered for review and analysis. The table also contains the median secondary removal efficiency for each compound, and where available, a typical pollutant removal efficiency based on information gathered by the Water Engineering Research Laboratory (WERL).

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AMERICAN BOTTOMS TREATMENT PLANT
PROCESS FLOW DIAGRAM

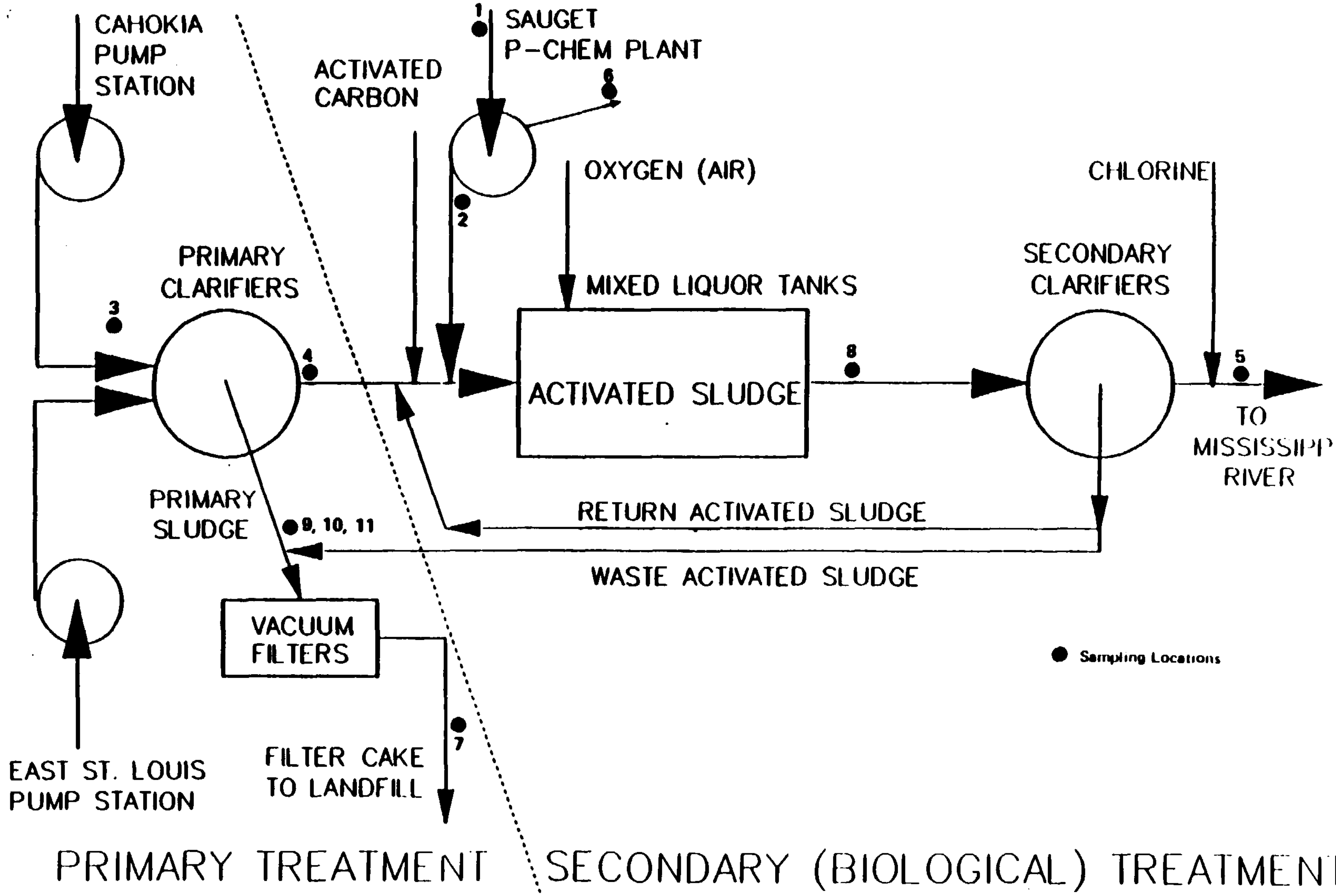

Figure 1-1.

TABLE 2-1. COMPARISON TO WERL PERCENT REMOVAL

CONSTITUENT	MEDIAN REMOVAL ACROSS AB SECONDARY(1) (MED % REMOVAL)	WERL (A.S.) (AVG % REMOVAL)
1,1,1 - Trichloroethane	100.00	85.1
1,2 - Dichlorobenzene	76.29	* >96.2
1,3 - Dichlorobenzene	100.00	93.3
1,4 - Dichlorobenzene	86.20	* 97
2,4 - Dichlorophenol	100.00	>83
2 - Butanone	(2)	NA
2 - Chlorophenol	78.00	NA
2 - Nitroaniline	48.10	NA
2 - Nitrophenol	98.29	>85
4 - Methyl-2-Pentanone	100.00	NA
4 - Chloroaniline	100.00	NA
4 - Nitroaniline	91.39	NA
4 - Nitrophenol	94.26	NA
Acetone	99.60	NA
Alachlor	10.12	NA
Aniline	100.00	NA

NA - Not available

*An asterisk indicates that the WERL removal efficiencies are greater than the removal efficiencies associated with the American Bottoms Secondary Removal process.

(1) Secondary removal is the median of the removal efficiencies calculated by adding mass loadings obtained at sampling points 2 and 4 (secondary influent mass) and subtracting the mass loadings at sampling point 5 (plant effluent mass) as shown on Figure 1-1, and expressing the difference as an average percentage of the secondary influent mass.
(2) Not present in influent.
(3) Actual calculated median removal was less than zero. Zero removal has been assumed for the determination of local influent limits.

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TABLE 2-1. COMPARISON TO VERL PERCENT REMOVAL (Continued)

CONSTITUENT	MEDIAN REMOVAL ACROSS AB SECONDARY(1) (MED % REMOVAL)		VERL (A.S.) (AVG % REMOVAL)
Atrazine	15.89		NA
Benzene	99.38	*	99.4
Butoxyethoxyethanol	(2)		NA
Butyl benzyl phthalate	100.00		94.6
Benzyl alcohol	100.00		NA
Caffeine	100.00		NA
Carbon Disulfide	100		NA
Chlorobenzene	98.34		96.5
Chloroform	0.00 (3)	*	>93.8
Chloronitrobenzene	96.41		NA
Di-n-butylphthalate	100.00		>87
Ethoxybenzenamine	(2)		NA
Ethylbenzene	98.73		97
Methylene Chloride	92.02	*	99.3
Naphthalene	100.00		98
Nitrobenzene	86.07		85.7
Phenols	81.13		NA
Toluene	100.00		95
Trichloroethene	98.2		87.6
Xylene	96.34		NA
bis (2-Ethylhexyl) phthalate	63.33	*	85

The removal efficiency data presented in Table 2-1 is the median of the 12 month American Bottoms Regional Wastewater Treatment Facility (ABRWTF) removal efficiency data generated for each compound under review. The WERL removal efficiency data is based on information which has been gathered by EPA and other agencies, over the years, during the development of Technology Transfer Documents and Treatability Review Manuals. The information listed in Table 2-1 is specific to the activated sludge process treating either an industrial source wastewater or a domestic source wastewater.

A comparison of the actual removal efficiencies for each compound to the WERL database removal efficiencies reveals that there was only data available for 18 of the 34 compounds listed and only six of these pollutants are being removed at levels lower than typically experienced in the activated sludge process. These six compounds are identified in Table 2-1 with an asterisk. However, of the six identified only four have removal efficiencies which are 10% less than the WERL reported value. These compounds are 1,2-dichlorobenzene, 1,4-dichlorobenzene chloroform, and bis (2-ethylhexyl) phthalate.

3. INHIBITORY CONCENTRATIONS

3.1 THRESHOLD INHIBITORY VALUES

As a source of information for determining the potential inhibitory effects of the existing pollutant loading on the ABRWTF, EPA's guidance manuals for the development of pretreatment programs was utilized. The January 1977 Federal Guidelines for State and Local Pretreatment Programs EPA 430/9-76-017a specifically identifies levels for numerous compounds which would inhibit biological processes. Table 3-1 contains a list of these threshold inhibitory levels adjacent to the compound under review. Also, listed in Table 3-1 is the actual or average pollutant concentrations as measured in the aeration basin effluent of the activated sludge system, along with the level of pollutants entering the process. Compa-

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TABLE 3-1. COMPARISON TO EPA INHIBITORY LEVELS

CONSTITUENT	AVG. INLET CONC.[1] AT ACTIVATED SLUDGE PROCESS (μg/l)	AVG. CONC. IN AERATION (μg/l)	INHIBITORY LEVEL FOR ACTIVATED SLUDGE PROCESS
1,1,1 - Trichloroethane	30	5	- NA
1,2 - Dichlorobenzene	130	56	- NA
1,3 - Dichlorobenzene	2	0.3	- NA
1,4 - Dichlorobenzene	120	60	- NA
2,4 - Dichlorophenol	3	2	- NA
2 - Butanone	622	13	- NA
2 - Chlorophenol	15	14	- NA
2 - Nitroaniline	3,600	1,930	- NA
2 - Nitrophenol	1,200	136	- NA
4 - Methyl-2-Pentanone	462	2	- NA
4 - Chloroaniline	340	209	- NA
4 - Nitroaniline	4,077	534	- NA
4 - Nitrophenol	3,000	425	- NA
Acetone	5,375	128	- NA
Alachlor	30	33	- NA

NA - Not Available

[1]Average inlet concentration at activated sludge calculated by adding the mass loadings at sampling points 2 and 4, and dividing by 8.34 times the secondary flow (in MGD).

TABLE 3-1. COMPARISON TO EPA INHIBITORY LEVELS, continued

CONSTITUENT	AVG. INLET CONC.[1] AT ACTIVATED SLUDGE PROCESS (μg/l)	AVG. CONC. IN AERATION (μg/l)	INHIBITORY LEVEL FOR ACTIVATED SLUDGE PROCESS
Aniline	5,800	125	- NA
Atrazine	110	47	- NA
Benzene	4,100	170	- NA
Butoxyethoxyethanol	0	320	- NA
Buthylbenzyl phthalate	12	0.1	- NA
Chlorobenzene	2,400	153	- NA
Chloroform	9	6	- NA
Chloronitrobenzene	830	149	- NA
Di-n-butylphthalate	1	1	- NA
Ethoxybenzenamine	0	91	- NA
Ethylbenzene	380	28	- NA
Methylene chloride	290	76	- NA
Naphthalene	8	5	- NA
Nitrobenzene	38	7	- NA
Phenols	660	0.4	- 200 mg/L for Activated Sludge Processes
Toluene	85	7	- Assume similar to Trinitro-toluene. 20-25 mg/L for Activated Sludge Processes

TABLE 3-1. COMPARISON TO EPA INHIBITORY LEVELS, continued

CONSTITUENT	AVG. INLET CONC.[1] AT ACTIVATED SLUDGE PROCESS (μg/l)	AVG. CONC. IN AERATION (μg/l)	INHIBITORY LEVEL FOR ACTIVATED SLUDGE PROCESS
Trichloroethene	17	8	- NA
Xylene	2,000	162	- NA
bis (2-Ethylhexyl) phthalate	18	84	- NA

rison of the measured pollutant levels to known limits that produce inhibition in treatment facilities should provide a list of target compounds that could potentially cause treatment problems at ABRWTF.

The data in Table 3-1 which is identified as "Average Concentration in Aeration" was generated from results of samples taken from the aeration basin effluent at the ABRWTF (sample location 8). This sampling point provides the most complete mixing of all of the wastestreams and recycle flows available in the treatment system. However, because of the high volume of recycle flow rates in the activated sludge process and the continuous biological activity, these values may be low due to the dilution in the system and partial degradation by the microbial mass. To more fully understand the dilution and biological impacts provided by the system, also listed in Table 3-1 is the pollutant concentration that is entering the aeration basin. These values were calculated utilizing the flow and analytical data provided in the database for the ABRWTF primary effluent (sample location 4) and the P-Chem Facility effluent (sample location 2). Calculating a value for the aeration system influent assumes that no interferences or interactions between chemical constituents occurs. Although this is not likely to be the case, the data that was calculated and presented in Table 3-1 serves as a reference point to understand the dilution or potential chemical changes that are occurring.

There were only two pollutants for which data was available in relation to activated sludge inhibition. The pollutants were toluene and phenol, neither of which pose a threat of inhibition at the levels detected in the system. Unfortunately, there was no other data available on the other 32 compounds on which a conclusion could be made.

4. CONCLUSIONS

Thirty-four compounds were compared to the WERL database for removal efficiency evaluation and the EPA Pretreatment Guidance Literature for inhibitory impact review.

CER 055629

Comparison to the WERL database revealed that six compounds were being treated and removed at levels lower than typically achieved. However, only four of the six compounds were found to have removal efficiencies which were 10 % less than the WERL reported value. The compounds are, 1,2-dichlorobenzene, 1,4-dichlorobenzene, chloroform, and bis (2-ethylhexyl) phthalate all of which are aromatic volatile compounds which should be treated to levels greater than or equal to 85%. The ABTP is removing 1,2-dichlorobenzene, 1,4-dichlorobenzene, and bis (2-ethylhexyl) phthalate with a median efficiency ranging from 63% to 86%. The level of treatment provided is low but reasonable given the large number of other volatile pollutants entering the system. Chloroform is the only compound which is not removed at all by the ABRWTF system. The detected removal efficiency is zero. The level in the aeration basin however is minimal, only 6 ppb on average, and lower than average removals can be expected with low influent concentrations. Therefore, it can be generally stated that the ABRWTF is effectively removing the volatile and semi-volatile pollutants which enter the system with the possible exception of chloroform.

In summary, when compared with the data available on inhibition to the activated sludge process, no threat was found. There was, however, very limited information on the inhibition levels for the 34 volatile compounds in Table 3-1. In general, the compounds listed are readily treated by the activated sludge process as seen by the high removal efficiencies listed in Table 2-1. Therefore, these compounds typically are removed and do not inhibit the process.

CER 055630

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

CER 055631

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION		SAMPLING DATE	INDUSTRY
1,1,1-Trichloroethane	62.	ug/l	04/12/89	CERRO-EAST
1,1,1-Trichloroethane	110.	ug/l	04/12/89	CERRO-EAST
1,1,1-Trichloroethane	91.	ug/l	03/15/89	CERRO-EAST
1,1,1-Trichloroethane	1800.	ug/l	04/12/89	CERRO-WEST
1,1,1-Trichloroethane	3000.	ug/l	03/15/89	CERRO-WEST
1,1,1-Trichloroethane	870.	ug/l	04/12/89	CLAYTON
1,1,1-Trichloroethane	2700.	ug/l	03/15/89	CLAYTON
1,1,1-Trichloroethane	1300.	ug/l	12/14/88	MONSANTO
1,1,1-Trichloroethane	2100.	ug/l	08/10/88	MONSANTO
1,1,1-Trichloroethane	9.	ug/l	04/12/89	TRADE WASTE
1,1,1-Trichloroethane	12.	ug/l	04/12/89	TRADE WASTE
1,1,2-Trichlorotrifluorethane	2300.	ug/l	08/10/88	MONSANTO
1,1-Dichloroethane	36.	ug/l	03/15/89	CERRO-WEST
1,2,4-Trichlorobenzene	16.	ug/l	02/15/89	MONSANTO
1,2,4-Trichlorobenzene	17.	ug/l	10/12/88	MONSANTO
1,2-Dichlorobenzene	430.	ug/l	04/12/89	MONSANTO
1,2-Dichlorobenzene	620.	ug/l	03/15/89	MONSANTO
1,2-Dichlorobenzene	270.	ug/l	02/15/89	MONSANTO
1,2-Dichlorobenzene	394.	ug/l	12/14/88	MONSANTO
1,2-Dichlorobenzene	470.	ug/l	12/14/88	MONSANTO
1,2-Dichlorobenzene	140.	ug/l	11/09/88	MONSANTO
1,2-Dichlorobenzene	390.	ug/l	10/12/88	MONSANTO
1,2-Dichlorobenzene	250.	ug/l	09/14/88	MONSANTO
1,2-Dichlorobenzene	110.	ug/l	08/10/88	MONSANTO
1,2-Dichlorobenzene	200.	ug/l	07/13/88	MONSANTO
1,2-Dichlorobenzene	320.	ug/l	03/15/89	ROGERS CARTAGE
1,3-Dichlorobenzene	87.	ug/l	03/15/89	MONSANTO
1,3-Dichlorobenzene	13.	ug/l	02/15/89	MONSANTO
1,3-Dichlorobenzene	13.	ug/l	12/14/88	MONSANTO
1,3-Dichlorobenzene	15.	ug/l	11/09/88	MONSANTO
1,3-Dichlorobenzene	28.	ug/l	10/12/88	MONSANTO
1,3-Dichlorobenzene	9.	ug/l	09/14/88	MONSANTO
1,3-Dichlorobenzene	8.260	ug/l	08/15/88	MONSANTO
1,3-Dichlorobenzene	12.	ug/l	03/15/89	ROGERS CARTAGE
1,4-Dichlorobenzene	700.	ug/l	04/12/89	MONSANTO
1,4-Dichlorobenzene	1400.	ug/l	03/15/89	MONSANTO
1,4-Dichlorobenzene	390.	ug/l	02/15/89	MONSANTO
1,4-Dichlorobenzene	260.	ug/l	12/14/88	MONSANTO
1,4-Dichlorobenzene	160.	ug/l	12/14/88	MONSANTO
1,4-Dichlorobenzene	330.	ug/l	11/09/88	MONSANTO
1,4-Dichlorobenzene	660.	ug/l	10/12/88	MONSANTO
1,4-Dichlorobenzene	350.	ug/l	09/14/88	MONSANTO
1,4-Dichlorobenzene	275.	ug/l	08/15/88	MONSANTO
1,4-Dichlorobenzene	180.	ug/l	08/10/88	MONSANTO
1,4-Dichlorobenzene	170.	ug/l	07/13/88	MONSANTO
1,4-Dichlorobenzene	100.	ug/l	03/15/89	ROGERS CARTAGE
2,4,6-Trichlorophenol	24.	ug/l	12/14/88	MONSANTO
2,4,6-Trichlorophenol	2.	ug/l	04/05/89	MUSICK

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APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION		SAMPLING DATE	INDUSTRY
2,4-Dichlorophenol	39.	ug/l	03/15/89	MONSANTO
2,4-Dichlorophenol	30.	ug/l	02/15/89	MONSANTO
2,4-Dichlorophenol	21.	ug/l	10/12/88	MONSANTO
2,4-Dichlorophenol	20.	ug/l	09/14/88	MONSANTO
2,4-Dichlorophenol	22.	ug/l	08/10/88	MONSANTO
2,4-Dichlorophenol	34.	ug/l	07/13/88	MONSANTO
2,4-Dinitrophenol	55.	ug/l	03/15/89	MONSANTO
2,4-Dinitrophenol	73.	ug/l	09/14/88	MONSANTO
2,4-Dinitrophenol	71.	ug/l	08/10/88	MONSANTO
2-Butanone	23000.	ug/l	12/14/88	MONSANTO
2-Butanone	800.	ug/l	10/12/88	MONSANTO
2-Butanone	32.	ug/l	12/28/89	MUSICK
2-Butoxyethanol	100.	ug/l	03/15/89	CERRO-EAST
2-Butoxyethanol	80.	ug/l	03/15/89	CERRO-WEST
2-Butoxyethanol	900.	ug/l	03/15/89	CLAYTON
2-Butoxyethanol	80.	ug/l	03/15/89	TRADE WASTE
2-Chlorophenol	57.	ug/l	03/15/89	MONSANTO
2-Chlorophenol	37.	ug/l	02/15/89	MONSANTO
2-Chlorophenol	21.	ug/l	12/14/88	MONSANTO
2-Chlorophenol	88	ug/l	11/09/88	MONSANTO
2-Chlorophenol	130.	ug/l	10/12/88	MONSANTO
2-Chlorophenol	110.	ug/l	09/14/88	MONSANTO
2-Chlorophenol	256.	ug/l	08/15/88	MONSANTO
2-Chlorophenol	58.	ug/l	08/10/88	MONSANTO
2-Chlorophenol	36.	ug/l	07/13/88	MONSANTO
2-Hexanol	400.	ug/l	03/15/89	MONSANTO
2-Hexanone	10000.	ug/l	03/15/89	MONSANTO
2-Methylnaphthalene	2.	ug/l	03/15/89	BIG RIVER ZINC
2-Methylnaphthalene	30.	ug/l	03/15/89	CLAYTON
2-Methylnaphthalene	30.	ug/l	03/15/89	ETHYL
2-Methylnaphthalene	280.	ug/l	03/15/89	MIDWEST RUBBER
2-Methylnaphthalene	18.	ug/l	03/15/89	ROGERS CARTAGE
2-Nitroaniline	26000.	ug/l	04/12/89	MONSANTO
2-Nitroaniline	5800.	ug/l	03/15/89	MONSANTO
2-Nitroaniline	10000.	ug/l	02/15/89	MONSANTO
2-Nitroaniline	43000.	ug/l	11/09/88	MONSANTO
2-Nitroaniline	15000.	ug/l	10/12/88	MONSANTO
2-Nitroaniline	13000.	ug/l	09/14/88	MONSANTO
2-Nitroaniline	8400.	ug/l	08/10/88	MONSANTO
2-Nitroaniline	13000	ug/l	07/13/88	MONSANTO
2-Nitrophenol	1000.	ug/l	04/12/89	MONSANTO
2-Nitrophenol	310.	ug/l	03/15/89	MONSANTO
2-Nitrophenol	810.	ug/l	02/15/89	MONSANTO
2-Nitrophenol	850.	ug/l	12/14/88	MONSANTO
2-Nitrophenol	6100.	ug/l	11/09/88	MONSANTO

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION		SAMPLING DATE	INDUSTRY
2-Nitrophenol	6000.	ug/l	10/12/88	MONSANTO
2-Nitrophenol	8700.	ug/l	09/14/88	MONSANTO
2-Nitrophenol	2700.	ug/l	08/10/88	MONSANTO
2-Nitrophenol	960.	ug/l	07/13/88	MONSANTO
4-Chloroaniline	610.	ug/l	03/15/89	MONSANTO
4-Chloroaniline	41.	ug/l	11/09/88	MONSANTO
4-Chloroaniline	130.	ug/l	10/12/88	MONSANTO
4-Chloroaniline	51.	ug/l	09/14/88	MONSANTO
4-Chloroaniline	460.	ug/l	08/10/88	MONSANTO
4-Chloroaniline	230.	ug/l	07/13/88	MONSANTO
4-Chloroaniline	130.	ug/l	03/15/89	ROGERS CARTAGE
4-Methyl-1,3-dioxalane	1500.	ug/l	08/10/88	MONSANTO
4-Methyl-2-Pentanone	14000.	ug/l	11/09/88	MONSANTO
4-Methyl-2-Pentanone	3000.	ug/l	09/14/88	MONSANTO
4-Methylphenol	780.	ug/l	03/15/89	MIDWEST RUBBER
4-Methylphenol	3.	ug/l	04/12/89	TRADE WASTE
4-Nitroaniline	9300.	ug/l	04/12/89	MONSANTO
4-Nitroaniline	7900.	ug/l	03/15/89	MONSANTO
4-Nitroaniline	8700.	ug/l	11/09/88	MONSANTO
4-Nitroaniline	11000.	ug/l	10/12/88	MONSANTO
4-Nitroaniline	4200.	ug/l	09/14/88	MONSANTO
4-Nitroaniline	150000.	ug/l	08/10/88	MONSANTO
4-Nitroaniline	84000.	ug/l	07/13/88	MONSANTO
4-Nitrophenol	7400.	ug/l	04/12/89	MONSANTO
4-Nitrophenol	14000.	ug/l	03/15/89	MONSANTO
4-Nitrophenol	22000.	ug/l	02/15/89	MONSANTO
4-Nitrophenol	22000.	ug/l	12/14/88	MONSANTO
4-Nitrophenol	2100.	ug/l	11/09/88	MONSANTO
4-Nitrophenol	7900.	ug/l	10/12/88	MONSANTO
4-Nitrophenol	10000.	ug/l	09/14/88	MONSANTO
4-Nitrophenol	4600.	ug/l	08/10/88	MONSANTO
4-Nitrophenol	100000.	ug/l	07/13/88	MONSANTO
5-Methyl-2-Hexanone	9000.	ug/l	03/15/89	MONSANTO
5-Methyl-2-Hexanone	2200.	ug/l	09/14/88	MONSANTO
Acenaphthene	3.	ug/l	03/15/89	CLAYTON
Acenaphthene	17.	ug/l	03/15/89	ROGERS CARTAGE
Acetic Acid Ester	300.	ug/l	03/15/89	CLAYTON
Acetic Acid Ester	600.	ug/l	03/21/89	LANCHEM
Acetic Acid Ester	30.	ug/l	03/21/89	PFIZER-SE
Acetone	50.	ug/l	04/12/89	CERRO-EAST
Acetone	51.	ug/l	04/12/89	CERRO-EAST
Acetone	32.	ug/l	03/15/89	CERRO-EAST
Acetone	18.	ug/l	03/15/89	CERRO-WEST
Acetone	1600.	ug/l	04/12/89	CLAYTON
Acetone	11000.	ug/l	03/15/89	CLAYTON
Acetone	140000.	ug/l	04/12/89	ETHYL
Acetone	36000.	ug/l	03/15/89	ETHYL

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

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RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION		SAMPLING DATE	INDUSTRY
Acetone	67.	ug/l	03/21/89	LANCHEM
Acetone	930.	ug/l	04/12/89	MIDWEST RUBBER
Acetone	580.	ug/l	03/15/89	MIDWEST RUBBER
Acetone	140.	ug/l	04/12/89	MONSANTO
Acetone	610.	ug/l	03/15/89	MONSANTO
Acetone	2700.	ug/l	12/14/88	MONSANTO
Acetone	210.	ug/l	11/09/88	MONSANTO
Acetone	10000.	ug/l	10/12/88	MONSANTO
Acetone	3200.	ug/l	09/14/88	MONSANTO
Acetone	3100.	ug/l	08/10/88	MONSANTO
Acetone	630.	ug/l	03/21/89	MUSICK
Acetone	140.	ug/l	04/05/89	MUSICK
Acetone	3800.	ug/l	12/28/89	MUSICK
Acetone	16.	ug/l	03/21/89	PFIZER-SE
Acetone	27.	ug/l	03/21/89	PFIZER-SW
Acetone	1400.	ug/l	03/15/89	ROGERS CARTAGE
Acetone	88.	ug/l	04/12/89	TRADE WASTE
Acetone	58.	ug/l	04/12/89	TRADE WASTE
Acetone	2700	ug/l	03/15/89	TRADE WASTE
Alachlor	20000.	ug/l	04/12/89	ROGERS CARTAGE
Alcohol	100.	ug/l	03/15/89	CLAYTON
Aldrin	0.200	ug/l	03/15/89	CERRO-EAST
Aldrin	1.800	ug/l	03/21/89	LANCHEM
Aniline	10000.	ug/l	04/12/89	MONSANTO
Aniline	9000.	ug/l	03/15/89	MONSANTO
Aniline	9000.	ug/l	02/15/89	MONSANTO
Aniline	3000.	ug/l	12/14/88	MONSANTO
Aniline	3100.	ug/l	11/09/88	MONSANTO
Aniline	5300.	ug/l	09/14/88	MONSANTO
Aniline	3400.	ug/l	08/10/88	MONSANTO
Anthracene	30.	ug/l	03/15/89	ROGERS CARTAGE
Antimony	0.000	mg/l	04/12/89	BIG RIVER ZINC
Antimony	0.000	mg/l	03/15/89	BIG RIVER ZINC
Antimony	0.000	mg/l	02/21/89	BIG RIVER ZINC
Antimony	0.013	mg/l	12/08/88	BIG RIVER ZINC
Antimony	0.011	mg/l	12/15/88	BIG RIVER ZINC
Antimony	0.007	mg/l	12/22/88	BIG RIVER ZINC
Antimony	0.009	mg/l	12/28/88	BIG RIVER ZINC
Antimony	0.005	mg/l	10/06/88	BIG RIVER ZINC
Antimony	0.011	mg/l	10/10/88	BIG RIVER ZINC
Antimony	0.018	mg/l	10/20/88	BIG RIVER ZINC
Antimony	0.016	mg/l	10/27/88	BIG RIVER ZINC
Antimony	0.032	mg/l	08/04/88	BIG RIVER ZINC
Antimony	0.016	mg/l	08/12/88	BIG RIVER ZINC
Antimony	0.019	mg/l	08/19/88	BIG RIVER ZINC
Antimony	0.038	mg/l	08/26/88	BIG RIVER ZINC
Antimony	2.000	mg/l	04/12/89	CERRO-EAST

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RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Antimony	0.000 mg/l	03/15/89	CERRO-EAST
Antimony	0.000 mg/l	02/22/89	CERRO-EAST
Antimony	0.230 mg/l	12/07/88	CERRO-EAST
Antimony	0.220 mg/l	12/07/88	CERRO-EAST
Antimony	0.200 mg/l	12/14/88	CERRO-EAST
Antimony	0.200 mg/l	12/22/88	CERRO-EAST
Antimony	0.200 mg/l	12/29/88	CERRO-EAST
Antimony	0.200 mg/l	08/12/88	CERRO-EAST
Antimony	0.200 mg/l	08/19/88	CERRO-EAST
Antimony	0.500 mg/l	08/24/88	CERRO-EAST
Antimony	0.200 mg/l	10/07/88	CERRO-EAST
Antimony	0.200 mg/l	10/14/88	CERRO-EAST
Antimony	0.200 mg/l	10/21/88	CERRO-EAST
Antimony	0.860 mg/l	10/26/88	CERRO-EAST
Antimony	0.000 mg/l	04/12/89	CERRO-WEST
Antimony	0.000 mg/l	03/15/89	CERRO-WEST
Antimony	0.000 mg/l	02/22/89	CERRO-WEST
Antimony	0.200 mg/l	08/12/88	CERRO-WEST
Antimony	0.200 mg/l	08/19/88	CERRO-WEST
Antimony	0.060 mg/l	08/24/88	CERRO-WEST
Antimony	0.200 mg/l	10/07/88	CERRO-WEST
Antimony	0.200 mg/l	10/14/88	CERRO-WEST
Antimony	0.200 mg/l	10/21/88	CERRO-WEST
Antimony	0.070 mg/l	10/26/88	CERRO-WEST
Antimony	0.200 mg/l	12/07/88	CERRO-WEST
Antimony	0.200 mg/l	12/07/88	CERRO-WEST
Antimony	0.200 mg/l	12/14/88	CERRO-WEST
Antimony	0.200 mg/l	12/22/88	CERRO-WEST
Antimony	0.200 mg/l	12/29/88	CERRO-WEST
Antimony	0.000 mg/l	04/12/89	CLAYTON
Antimony	0.000 mg/l	03/15/89	CLAYTON
Antimony	0.0[illegible]0 mg/l	04/12/89	ETHYL
Antimony	0.000 mg/l	03/15/89	ETHYL
Antimony	0.005 mg/l	07/07/88	ETHYL
Antimony	0.005 mg/l	07/13/88	ETHYL
Antimony	0.006 mg/l	07/21/88	ETHYL
Antimony	0.005 mg/l	07/28/88	ETHYL
Antimony	0.005 mg/l	10/06/88	ETHYL
Antimony	0.005 mg/l	10/13/88	ETHYL
Antimony	0.005 mg/l	10/20/88	ETHYL
Antimony	0.005 mg/l	10/27/88	ETHYL
Antimony	0.005 mg/l	12/09/88	ETHYL
Antimony	0.005 mg/l	12/15/88	ETHYL
Antimony	0.005 mg/l	12/22/88	ETHYL
Antimony	0.005 mg/l	12/29/88	ETHYL
Antimony	0.000 mg/l	04/18/89	LANCHEM
Antimony	0.000 mg/l	03/21/89	LANCHEM
Antimony	0.010 mg/l	01/26/89	LANCHEM
Antimony	0.050 mg/l	11/01/88	LANCHEM
Antimony	0.000 mg/l	04/12/89	MIDWEST RUBBER
Antimony	0.000 mg/l	03/15/89	MIDWEST RUBBER
Antimony	0.038 mg/l	08/08/88	MIDWEST RUBBER
Antimony	0.036 mg/l	08/17/88	MIDWEST RUBBER
Antimony	0.0[illegible]8 mg/l	08/24/88	MIDWEST RUBBER
Antimony	0.0[illegible]8 mg/l	08/31/88	MIDWEST RUBBER
Antimony	0.0[illegible]3 mg/l	10/04/88	MIDWEST RUBBER
Antimony	0.0[illegible]3 mg/l	10/12/88	MIDWEST RUBBER
Antimony	0.0[illegible]3 mg/l	10/18/88	MIDWEST RUBBER

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APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Antimony	0.053 mg/l	10/26/88	MIDWEST RUBBER
Antimony	0.000 mg/l	02/21/89	MIDWEST RUBBER
Antimony	0.000 mg/l	04/12/89	MONSANTO
Antimony	0.000 mg/l	03/15/89	MONSANTO
Antimony	0.000 mg/l	02/15/89	MONSANTO
Antimony	0.000 mg/l	01/18/89	MONSANTO
Antimony	0.009 mg/l	12/07/88	MONSANTO
Antimony	0.005 mg/l	12/14/88	MONSANTO
Antimony	0.007 mg/l	12/19/88	MONSANTO
Antimony	0.006 mg/l	12/27/88	MONSANTO
Antimony	0.000 mg/l	12/14/88	MONSANTO
Antimony	0.000 mg/l	11/09/88	MONSANTO
Antimony	0.027 mg/l	10/06/88	MONSANTO
Antimony	0.018 mg/l	10/13/88	MONSANTO
Antimony	0.000 mg/l	10/12/88	MONSANTO
Antimony	0.000 mg/l	09/14/88	MONSANTO
Antimony	0.000 mg/l	08/10/88	MONSANTO
Antimony	0.000 mg/l	07/13/88	MONSANTO
Antimony	0.000 mg/l	04/18/89	MUSICK
Antimony	0.000 mg/l	03/21/89	MUSICK
Antimony	0.200 mg/l	01/04/89	MUSICK
Antimony	0.600 mg/l	11/21/88	MUSICK
Antimony	0.000 mg/l	04/19/89	PFIZER-SE
Antimony	0.000 mg/l	03/21/89	PFIZER-SE
Antimony	0.000 mg/l	02/27/89	PFIZER-SE
Antimony	0.005 mg/l	12/09/88	PFIZER-SE
Antimony	0.010 mg/l	12/15/88	PFIZER-SE
Antimony	0.010 mg/l	12/20/88	PFIZER-SE
Antimony	0.005 mg/l	10/03/88	PFIZER-SE
Antimony	0.010 mg/l	10/12/88	PFIZER-SE
Antimony	0.010 mg/l	10/19/88	PFIZER-SE
Antimony	0.005 mg/l	10/27/88	PFIZER-SE
Antimony	0.013 mg/l	07/05/88	PFIZER-SE
Antimony	0.030 mg/l	07/12/88	PFIZER-SE
Antimony	0.003 mg/l	07/21/88	PFIZER-SE
Antimony	0.015 mg/l	07/27/88	PFIZER-SE
Antimony	0.000 mg/l	04/19/89	PFIZER-SW
Antimony	0.000 mg/l	03/21/89	PFIZER-SW
Antimony	0.000 mg/l	02/27/89	PFIZER-SW
Antimony	0.010 mg/l	12/09/88	PFIZER-SW
Antimony	0.005 mg/l	12/15/88	PFIZER-SW
Antimony	0.005 mg/l	12/20/88	PFIZER-SW
Antimony	0.005 mg/l	10/03/88	PFIZER-SW
Antimony	0.005 mg/l	10/12/88	PFIZER-SW
Antimony	0.005 mg/l	10/19/88	PFIZER-SW
Antimony	0.005 mg/l	10/27/88	PFIZER-SW
Antimony	0.003 mg/l	07/05/88	PFIZER-SW
Antimony	0.003 mg/l	07/12/88	PFIZER-SW
Antimony	0.003 mg/l	07/21/88	PFIZER-SW
Antimony	0.003 mg/l	07/27/88	PFIZER-SW
Antimony	0.000 mg/l	04/12/89	ROGERS CARTAGE
Antimony	0.000 mg/l	03/15/89	ROGERS CARTAGE
Antimony	0.000 mg/l	04/12/89	TRADE WASTE
Antimony	0.000 mg/l	03/15/89	TRADE WASTE
Arsenic	0.017 mg/l	04/12/89	BIG RIVER ZINC
Arsenic	0.000 mg/l	03/15/89	BIG RIVER ZINC

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Arsenic	0.008 mg/l	02/21/89	BIG RIVER ZINC
Arsenic	0.027 mg/l	12/08/88	BIG RIVER ZINC
Arsenic	0.044 mg/l	12/15/88	BIG RIVER ZINC
Arsenic	0.023 mg/l	12/22/88	BIG RIVER ZINC
Arsenic	0.027 mg/l	12/28/88	BIG RIVER ZINC
Arsenic	0.013 mg/l	10/06/88	BIG RIVER ZINC
Arsenic	0.026 mg/l	10/10/88	BIG RIVER ZINC
Arsenic	0.009 mg/l	10/20/88	BIG RIVER ZINC
Arsenic	0.019 mg/l	10/27/88	BIG RIVER ZINC
Arsenic	0.026 mg/l	08/04/88	BIG RIVER ZINC
Arsenic	0.050 mg/l	08/12/88	BIG RIVER ZINC
Arsenic	0.005 mg/l	08/19/88	BIG RIVER ZINC
Arsenic	0.028 mg/l	08/26/88	BIG RIVER ZINC
Arsenic	5.000 mg/l	04/12/89	CERRO-EAST
Arsenic	0.620 mg/l	03/15/89	CERRO-EAST
Arsenic	0.490 mg/l	02/22/89	CERRO-EAST
Arsenic	0.290 mg/l	12/07/88	CERRO-EAST
Arsenic	0.260 mg/l	12/07/88	CERRO-EAST
Arsenic	0.900 mg/l	12/14/88	CERRO-EAST
Arsenic	0.100 mg/l	12/22/88	CERRO-EAST
Arsenic	0.100 mg/l	12/29/88	CERRO-EAST
Arsenic	2.530 mg/l	08/12/88	CERRO-EAST
Arsenic	0.100 mg/l	08/19/88	CERRO-EAST
Arsenic	0.730 mg/l	08/24/88	CERRO-EAST
Arsenic	1.650 mg/l	10/07/88	CERRO-EAST
Arsenic	0.160 mg/l	10/14/88	CERRO-EAST
Arsenic	0.810 mg/l	10/21/88	CERRO-EAST
Arsenic	3.000 mg/l	10/26/88	CERRO-EAST
Arsenic	0.000 mg/l	04/12/89	CERRO-WEST
Arsenic	0.000 mg/l	03/15/89	CERRO-WEST
Arsenic	0.009 mg/l	02/22/89	CERRO-WEST
Arsenic	2.580 mg/l	08/12/88	CERRO-WEST
Arsenic	0.740 mg/l	08/19/88	CERRO-WEST
Arsenic	0.440 mg/l	08/24/88	CERRO-WEST
Arsenic	0.100 mg/l	10/07/88	CERRO-WEST
Arsenic	0.100 mg/l	10/14/88	CERRO-WEST
Arsenic	2.150 mg/l	10/21/88	CERRO-WEST
Arsenic	0.140 mg/l	10/26/88	CERRO-WEST
Arsenic	0.050 mg/l	12/07/88	CERRO-WEST
Arsenic	0.050 mg/l	12/07/88	CERRO-WEST
Arsenic	0.100 mg/l	12/14/88	CERRO-WEST
Arsenic	0.120 mg/l	12/22/88	CERRO-WEST
Arsenic	0.200 mg/l	12/29/88	CERRO-WEST
Arsenic	0.000 mg/l	04/12/89	CLAYTON
Arsenic	0.000 mg/l	03/15/89	CLAYTON
Arsenic	0.004 mg/l	04/12/89	ETHYL
Arsenic	0.000 mg/l	03/15/89	ETHYL
Arsenic	0.005 mg/l	07/07/88	ETHYL
Arsenic	0.005 mg/l	07/13/88	ETHYL
Arsenic	0.006 mg/l	07/21/88	ETHYL
Arsenic	0.052 mg/l	07/28/88	ETHYL
Arsenic	0.005 mg/l	10/06/88	ETHYL
Arsenic	0.005 mg/l	10/13/88	ETHYL
Arsenic	0.007 mg/l	10/20/88	ETHYL
Arsenic	0.030 mg/l	10/27/88	ETHYL
Arsenic	0.012 mg/l	12/09/88	ETHYL
Arsenic	0.068 mg/l	12/15/88	ETHYL
Arsenic	0.010 mg/l	12/22/88	ETHYL
Arsenic	0.005 mg/l	12/29/88	ETHYL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Arsenic	0.041 mg/l	04/18/89	LANCHEM
Arsenic	0.000 mg/l	03/21/89	LANCHEM
Arsenic	0.060 mg/l	01/26/89	LANCHEM
Arsenic	0.010 mg/l	11/01/88	LANCHEM
Arsenic	0.000 mg/l	04/12/89	MIDWEST RUBBER
Arsenic	0.000 mg/l	03/15/89	MIDWEST RUBBER
Arsenic	0.005 mg/l	08/08/88	MIDWEST RUBBER
Arsenic	0.010 mg/l	08/17/88	MIDWEST RUBBER
Arsenic	0.047 mg/l	08/24/88	MIDWEST RUBBER
Arsenic	0.047 mg/l	08/31/88	MIDWEST RUBBER
Arsenic	0.007 mg/l	10/04/88	MIDWEST RUBBER
Arsenic	0.014 mg/l	10/12/88	MIDWEST RUBBER
Arsenic	0.002 mg/l	10/18/88	MIDWEST RUBBER
Arsenic	0.002 mg/l	10/26/88	MIDWEST RUBBER
Arsenic	0.000 mg/l	02/21/89	MIDWEST RUBBER
Arsenic	0.000 mg/l	04/12/89	MONSANTO
Arsenic	0.000 mg/l	03/15/89	MONSANTO
Arsenic	0.054 mg/l	02/15/89	MONSANTO
Arsenic	0.000 mg/l	01/18/89	MONSANTO
Arsenic	0.000 mg/l	12/14/88	MONSANTO
Arsenic	0.000 mg/l	11/09/88	MONSANTO
Arsenic	0.000 mg/l	10/12/88	MONSANTO
Arsenic	0.005 mg/l	09/14/88	MONSANTO
Arsenic	0.011 mg/l	08/10/88	MONSANTO
Arsenic	0.000 mg/l	07/13/88	MONSANTO
Arsenic	0.000 mg/l	04/18/89	MUSICK
Arsenic	0.000 mg/l	03/21/89	MUSICK
Arsenic	0.002 mg/l	01/04/89	MUSICK
Arsenic	0.002 mg/l	11/21/88	MUSICK
Arsenic	0.000 mg/l	04/19/89	PFIZER-SE
Arsenic	0.000 mg/l	03/21/89	PFIZER-SE
Arsenic	0.000 mg/l	02/27/89	PFIZER-SE
Arsenic	0.002 mg/l	12/09/88	PFIZER-SE
Arsenic	0.002 mg/l	12/15/88	PFIZER-SE
Arsenic	0.002 mg/l	12/20/88	PFIZER-SE
Arsenic	0.002 mg/l	12/28/88	PFIZER-SE
Arsenic	0.004 mg/l	10/03/88	PFIZER-SE
Arsenic	0.004 mg/l	10/12/88	PFIZER-SE
Arsenic	0.004 mg/l	10/19/88	PFIZER-SE
Arsenic	0.008 mg/l	10/27/88	PFIZER-SE
Arsenic	0.003 mg/l	07/05/88	PFIZER-SE
Arsenic	0.003 mg/l	07/12/88	PFIZER-SE
Arsenic	0.003 mg/l	07/21/88	PFIZER-SE
Arsenic	0.008 mg/l	07/27/88	PFIZER-SE
Arsenic	0.000 mg/l	04/19/89	PFIZER-SW
Arsenic	0.000 mg/l	03/21/89	PFIZER-SW
Arsenic	0.000 mg/l	02/27/89	PFIZER-SW
Arsenic	0.002 mg/l	12/09/88	PFIZER-SW
Arsenic	0.002 mg/l	12/15/88	PFIZER-SW
Arsenic	0.002 mg/l	12/20/88	PFIZER-SW
Arsenic	0.002 mg/l	12/28/88	PFIZER-SW
Arsenic	0.002 mg/l	10/03/88	PFIZER-SW
Arsenic	0.004 mg/l	10/12/88	PFIZER-SW
Arsenic	0.004 mg/l	10/19/88	PFIZER-SW
Arsenic	0.004 mg/l	10/27/88	PFIZER-SW
Arsenic	0.003 mg/l	07/05/88	PFIZER-SW
Arsenic	0.003 mg/l	07/12/88	PFIZER-SW

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Arsenic	0.003 mg/l	07/21/88	PFIZER-SW
Arsenic	0.003 mg/l	07/27/88	PFIZER-SW
Arsenic	0.000 mg/l	04/12/89	ROGERS CARTAGE
Arsenic	0.000 mg/l	03/15/89	ROGERS CARTAGE
Arsenic	0.066 mg/l	04/12/89	TRADE WASTE
Arsenic	0.000 mg/l	03/15/89	TRADE WASTE
BOD	10.000 mg/l	04/12/89	BIG RIVER ZINC
BOD	20.000 mg/l	03/15/89	BIG RIVER ZINC
BOD	35.000 mg/l	02/21/89	BIG RIVER ZINC
BOD	9.000 mg/l	12/08/88	BIG RIVER ZINC
BOD	34.000 mg/l	12/15/88	BIG RIVER ZINC
BOD	32.300 mg/l	12/22/88	BIG RIVER ZINC
BOD	36.000 mg/l	12/28/88	BIG RIVER ZINC
BOD	36.000 mg/l	10/06/88	BIG RIVER ZINC
BOD	7.000 mg/l	10/10/88	BIG RIVER ZINC
BOD	26.300 mg/l	10/20/88	BIG RIVER ZINC
BOD	32.400 mg/l	10/27/88	BIG RIVER ZINC
BOD	7.900 mg/l	08/04/88	BIG RIVER ZINC
BOD	21.400 mg/l	08/12/88	BIG RIVER ZINC
BOD	10.600 mg/l	08/19/88	BIG RIVER ZINC
BOD	11.000 mg/l	08/26/88	BIG RIVER ZINC
BOD	100.000 mg/l	04/12/89	CERRO-EAST
BOD	50.000 mg/l	03/15/89	CERRO-EAST
BOD	13.000 mg/l	02/22/89	CERRO-EAST
BOD	20.000 mg/l	12/14/88	CERRO-EAST
BOD	116.000 mg/l	12/22/88	CERRO-EAST
BOD	32.000 mg/l	12/29/88	CERRO-EAST
BOD	16.000 mg/l	08/12/88	CERRO-EAST
BOD	56.000 mg/l	08/19/88	CERRO-EAST
BOD	5.000 mg/l	10/07/88	CERRO-EAST
BOD	126.000 mg/l	10/14/88	CERRO-EAST
BOD	39.000 mg/l	10/21/88	CERRO-EAST
BOD	17.000 mg/l	10/26/88	CERRO-EAST
BOD	12.000 mg/l	04/12/89	CERRO-WEST
BOD	10.000 mg/l	03/15/89	CERRO-WEST
BOD	18.000 mg/l	02/22/89	CERRO-WEST
BOD	5.000 mg/l	08/12/88	CERRO-WEST
BOD	1.000 mg/l	08/19/88	CERRO-WEST
BOD	1.000 mg/l	10/07/88	CERRO-WEST
BOD	10.000 mg/l	10/14/88	CERRO-WEST
BOD	12.000 mg/l	10/21/88	CERRO-WEST
BOD	15.000 mg/l	10/26/88	CERRO-WEST
BOD	15.000 mg/l	12/14/88	CERRO-WEST
BOD	223.000 mg/l	12/22/88	CERRO-WEST
BOD	45.000 mg/l	12/29/88	CERRO-WEST
BOD	170.000 mg/l	04/12/89	CLAYTON
BOD	670.000 mg/l	03/15/89	CLAYTON
BOD	1200.000 mg/l	04/12/89	ETHYL
BOD	1100.000 mg/l	03/15/89	ETHYL
BOD	646.000 mg/l	07/07/88	ETHYL
BOD	798.000 mg/l	07/13/88	ETHYL
BOD	492.000 mg/l	07/21/88	ETHYL
BOD	51.700 mg/l	07/28/88	ETHYL
BOD	1790.000 mg/l	10/06/88	ETHYL
BOD	482.000 mg/l	10/13/88	ETHYL
BOD	965.000 mg/l	10/20/88	ETHYL

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
BOD	174.000 mg/l	10/27/88	ETHYL
BOD	756.000 mg/l	12/09/88	ETHYL
BOD	606.000 mg/l	12/15/88	ETHYL
BOD	84.300 mg/l	12/22/88	ETHYL
BOD	689.000 mg/l	12/29/88	ETHYL
BOD	930.000 mg/l	04/18/89	LANCHEM
BOD	30.000 mg/l	03/21/89	LANCHEM
BOD	445.000 mg/l	01/26/89	LANCHEM
BOD	2589.000 mg/l	11/01/88	LANCHEM
BOD	200.000 mg/l	04/12/89	MIDWEST RUBBER
BOD	320.000 mg/l	03/15/89	MIDWEST RUBBER
BOD	115.000 mg/l	08/08/88	MIDWEST RUBBER
BOD	122.000 mg/l	08/17/88	MIDWEST RUBBER
BOD	157.000 mg/l	08/24/88	MIDWEST RUBBER
BOD	180.000 mg/l	08/31/88	MIDWEST RUBBER
BOD	69.000 mg/l	10/04/88	MIDWEST RUBBER
BOD	86.000 mg/l	10/12/88	MIDWEST RUBBER
BOD	74.100 mg/l	10/18/88	MIDWEST RUBBER
BOD	245.200 mg/l	10/26/88	MIDWEST RUBBER
BOD	500.000 mg/l	02/21/89	MIDWEST RUBBER
BOD	87.000 mg/l	04/12/89	MONSANTO
BOD	87.000 mg/l	04/12/89	MONSANTO
BOD	70.000 mg/l	03/15/89	MONSANTO
BOD	140.000 mg/l	02/15/89	MONSANTO
BOD	62.000 mg/l	01/18/89	MONSANTO
BOD	102.000 mg/l	12/07/88	MONSANTO
BOD	282.000 mg/l	12/14/88	MONSANTO
BOD	164.000 mg/l	12/19/88	MONSANTO
BOD	225.000 mg/l	12/27/88	MONSANTO
BOD	260.000 mg/l	12/14/88	MONSANTO
BOD	84.000 mg/l	11/09/88	MONSANTO
BOD	6.000 mg/l	10/06/88	MONSANTO
BOD	133.000 mg/l	10/13/88	MONSANTO
BOD	63.300 mg/l	10/18/88	MONSANTO
BOD	110.000 mg/l	10/26/88	MONSANTO
BOD	60.000 mg/l	10/12/88	MONSANTO
BOD	50.000 mg/l	09/14/88	MONSANTO
BOD	4.000 mg/l	08/15/88	MONSANTO
BOD	2.000 mg/l	08/23/88	MONSANTO
BOD	5.000 mg/l	08/29/88	MONSANTO
BOD	120.000 mg/l	09/06/88	MONSANTO
BOD	0.000 mg/l	08/10/88	MONSANTO
BOD	74.000 mg/l	07/13/88	MONSANTO
BOD	66.000 mg/l	04/18/89	MUSICK
BOD	40.000 mg/l	03/21/89	MUSICK
BOD	27.000 mg/l	01/04/89	MUSICK
BOD	9.000 mg/l	11/21/88	MUSICK
BOD	0.000 mg/l	04/19/89	PFIZER-SE
BOD	7.000 mg/l	03/21/89	PFIZER-SE
BOD	21.000 mg/l	02/27/89	PFIZER-SE
BOD	21.000 mg/l	12/20/88	PFIZER-SE
BOD	19.500 mg/l	12/28/88	PFIZER-SE
BOD	23.750 mg/l	10/03/88	PFIZER-SE
BOD	34.900 mg/l	10/12/88	PFIZER-SE
BOD	49.400 mg/l	10/19/88	PFIZER-SE
BOD	9.000 mg/l	07/05/88	PFIZER-SE
BOD	12.000 mg/l	07/12/88	PFIZER-SE
BOD	8.700 mg/l	07/21/88	PFIZER-SE

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
BOD	49.700 mg/l	07/27/88	PFIZER-SE
BOD	8.000 mg/l	04/19/89	PFIZER-SW
BOD	10.000 mg/l	03/21/89	PFIZER-SW
BOD	17.000 mg/l	02/27/89	PFIZER-SW
BOD	31.800 mg/l	12/20/88	PFIZER-SW
BOD	20.000 mg/l	12/28/88	PFIZER-SW
BOD	31.900 mg/l	10/03/88	PFIZER-SW
BOD	7.500 mg/l	10/12/88	PFIZER-SW
BOD	24.000 mg/l	10/19/88	PFIZER-SW
BOD	9.750 mg/l	07/05/88	PFIZER-SW
BOD	12.500 mg/l	07/12/88	PFIZER-SW
BOD	16.900 mg/l	07/21/88	PFIZER-SW
BOD	42.000 mg/l	07/27/88	PFIZER-SW
BOD	280.000 mg/l	04/12/89	ROGERS CARTAGE
BOD	220.000 mg/l	03/15/89	ROGERS CARTAGE
BOD	440.000 mg/l	04/12/89	TRADE WASTE
BOD	40.000 mg/l	03/15/89	TRADE WASTE
Barium	0.072 mg/l	04/12/89	BIG RIVER ZINC
Barium	0.059 mg/l	03/15/89	BIG RIVER ZINC
Barium	1.200 mg/l	04/12/89	CERRO-EAST
Barium	0.098 mg/l	03/15/89	CERRO-EAST
Barium	0.068 mg/l	04/12/89	CERRO-WEST
Barium	0.065 mg/l	03/15/89	CERRO-WEST
Barium	0.100 mg/l	04/12/89	CLAYTON
Barium	0.0[illegible]2 mg/l	03/15/89	CLAYTON
Barium	0.190 mg/l	04/12/89	ETHYL
Barium	0.052 mg/l	03/15/89	ETHYL
Barium	0.120 mg/l	04/12/89	MIDWEST RUBBER
Barium	0.170 mg/l	03/15/89	MIDWEST RUBBER
Barium	0.065 mg/l	04/12/89	MONSANTO
Barium	0.081 mg/l	03/15/89	MONSANTO
Barium	0.000 mg/l	02/15/89	MONSANTO
Barium	0.052 mg/l	01/18/89	MONSANTO
Barium	0.000 mg/l	12/14/88	MONSANTO
Barium	0.062 mg/l	11/09/88	MONSANTO
Barium	0.113 mg/l	10/12/88	MONSANTO
Barium	0.0[illegible]6 mg/l	09/14/88	MONSANTO
Barium	0.0[illegible]1 mg/l	08/10/88	MONSANTO
Barium	0.088 mg/l	07/13/88	MONSANTO
Barium	0.150 mg/l	04/12/89	ROGERS CARTAGE
Barium	0.090 mg/l	03/15/89	ROGERS CARTAGE
Barium	0.1[illegible]0 mg/l	04/12/89	TRADE WASTE
Barium	0.1[illegible]0 mg/l	03/15/89	TRADE WASTE
Barium (avg)(1)	8.9[illegible]0 mg/l	03/88	PFIZER-SE
Barium (avg)(1)	3.560 mg/l	02/88	PFIZER-SE
Barium (avg)(1)	14.190 mg/l	03/88	PFIZER-SW
Barium (avg)(1)	6.4[illegible]0 mg/l	02/88	PFIZER-SW
Benzene	18000. ug/l	04/12/89	ETHYL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION		SAMPLING DATE	INDUSTRY
Benzene	18000.	ug/l	03/15/89	ETHYL
Benzene	25.	ug/l	11/01/88	LANCHEM
Benzene	19.	ug/l	04/12/89	MIDWEST RUBBER
Benzene	29000.	ug/l	04/12/89	MONSANTO
Benzene	24000.	ug/l	03/15/89	MONSANTO
Benzene	22000.	ug/l	02/15/89	MONSANTO
Benzene	48000.	ug/l	01/18/89	MONSANTO
Benzene	18800.	ug/l	12/14/88	MONSANTO
Benzene	15000.	ug/l	12/14/88	MONSANTO
Benzene	130000.	ug/l	11/09/88	MONSANTO
Benzene	17000.	ug/l	10/12/88	MONSANTO
Benzene	18000.	ug/l	09/14/88	MONSANTO
Benzene	4710.	ug/l	08/15/88	MONSANTO
Benzene	6800.	ug/l	08/10/88	MONSANTO
Benzene	1100.	ug/l	07/13/88	MONSANTO
Benzofuran	330.	ug/l	09/14/88	MONSANTO
Benzofurazan	500.	ug/l	02/15/89	MONSANTO
Benzofurazan	100.	ug/l	12/14/88	MONSANTO
Benzofurazan	230.	ug/l	11/09/88	MONSANTO
Benzofurazan	230.	ug/l	08/10/88	MONSANTO
Benzofurazan	370.	ug/l	07/13/88	MONSANTO
Benzoic acid	49.	ug/l	03/15/89	CLAYTON
Benzoic acid	24.	ug/l	04/12/89	TRADE WASTE
Benzyl Alcohol	15.	ug/l	03/15/89	CLAYTON
Benzyl Alcohol	1.	ug/l	12/28/89	MUSICK
Benzyl Alcohol	1900.	ug/l	03/15/89	ROGERS CARTAGE
Benzyl Alcohol	2.	ug/l	03/15/89	TRADE WASTE
Beryllium	0.000	mg/l	04/12/89	BIG RIVER ZINC
Beryllium	0.000	mg/l	03/15/89	BIG RIVER ZINC
Beryllium	0.000	mg/l	02/21/89	BIG RIVER ZINC
Beryllium	0.005	mg/l	12/08/88	BIG RIVER ZINC
Beryllium	0.025	mg/l	12/15/88	BIG RIVER ZINC
Beryllium	0.025	mg/l	12/22/88	BIG RIVER ZINC
Beryllium	0.025	mg/l	12/28/88	BIG RIVER ZINC
Beryllium	0.005	mg/l	10/06/88	BIG RIVER ZINC
Beryllium	0.005	mg/l	10/10/88	BIG RIVER ZINC
Beryllium	0.005	mg/l	10/20/88	BIG RIVER ZINC
Beryllium	0.005	mg/l	10/27/88	BIG RIVER ZINC
Beryllium	0.025	mg/l	08/04/88	BIG RIVER ZINC
Beryllium	0.025	mg/l	08/12/88	BIG RIVER ZINC
Beryllium	0.025	mg/l	08/19/88	BIG RIVER ZINC
Beryllium	0.025	mg/l	08/26/88	BIG RIVER ZINC
Beryllium	0.014	mg/l	04/12/89	CERRO-EAST
Beryllium	0.003	mg/l	03/15/89	CERRO-EAST
Beryllium	0.072	mg/l	02/22/89	CERRO-EAST
Beryllium	0.050	mg/l	12/07/88	CERRO-EAST
Beryllium	0.010	mg/l	12/07/88	CERRO-EAST
Beryllium	0.0[illegible]0	mg/l	12/14/88	CERRO-EAST
Beryllium	0.0[illegible]0	mg/l	12/22/88	CERRO-EAST
Beryllium	0.020	mg/l	12/29/88	CERRO-EAST

CER 055643

~~EPA/CERRO COPPER/EIL/PCB ATTORNEY WORK PRODUCT / ATTORNEY CLIENT PRIVILEGE~~

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Beryllium	0.020 mg/l	08/12/88	CERRO-EAST
Beryllium	0.020 mg/l	08/19/88	CERRO-EAST
Beryllium	0.020 mg/l	08/24/88	CERRO-EAST
Beryllium	0.050 mg/l	10/07/88	CERRO-EAST
Beryllium	0.050 mg/l	10/14/88	CERRO-EAST
Beryllium	0.050 mg/l	10/21/88	CERRO-EAST
Beryllium	0.062 mg/l	10/26/88	CERRO-EAST
Beryllium	0.000 mg/l	04/12/89	CERRO-WEST
Beryllium	0.000 mg/l	03/15/89	CERRO-WEST
Beryllium	0.000 mg/l	02/22/89	CERRO-WEST
Beryllium	0.020 mg/l	08/12/88	CERRO-WEST
Beryllium	0.020 mg/l	08/19/88	CERRO-WEST
Beryllium	0.001 mg/l	08/24/88	CERRO-WEST
Beryllium	0.020 mg/l	10/07/88	CERRO-WEST
Beryllium	0.020 mg/l	10/14/88	CERRO-WEST
Beryllium	0.020 mg/l	10/21/88	CERRO-WEST
Beryllium	0.002 mg/l	10/26/88	CERRO-WEST
Beryllium	0.010 mg/l	12/07/88	CERRO-WEST
Beryllium	0.010 mg/l	12/07/88	CERRO-WEST
Beryllium	0.020 mg/l	12/14/88	CERRO-WEST
Beryllium	0.020 mg/l	12/22/88	CERRO-WEST
Beryllium	0.020 mg/l	12/29/88	CERRO-WEST
Beryllium	0.000 mg/l	04/12/89	CLAYTON
Beryllium	0.000 mg/l	03/15/89	CLAYTON
Beryllium	0.000 mg/l	04/12/89	ETHYL
Beryllium	0.000 mg/l	03/15/89	ETHYL
Beryllium	0.005 mg/l	07/07/88	ETHYL
Beryllium	0.025 mg/l	07/13/88	ETHYL
Beryllium	0.025 mg/l	07/21/88	ETHYL
Beryllium	0.025 mg/l	07/28/88	ETHYL
Beryllium	0.005 mg/l	10/06/88	ETHYL
Beryllium	0.005 mg/l	10/13/88	ETHYL
Beryllium	0.005 mg/l	10/20/88	ETHYL
Beryllium	0.005 mg/l	10/27/88	ETHYL
Beryllium	0.005 mg/l	12/09/88	ETHYL
Beryllium	0.025 mg/l	12/15/88	ETHYL
Beryllium	0.025 mg/l	12/22/88	ETHYL
Beryllium	0.025 mg/l	12/29/88	ETHYL
Beryllium	0.000 mg/l	04/18/89	LANCHEM
Beryllium	0.000 mg/l	03/21/89	LANCHEM
Beryllium	0.010 mg/l	01/26/89	LANCHEM
Beryllium	0.010 mg/l	11/01/88	LANCHEM
Beryllium	0.000 mg/l	04/12/89	MIDWEST RUBBER
Beryllium	0.000 mg/l	03/15/89	MIDWEST RUBBER
Beryllium	0.002 mg/l	08/08/88	MIDWEST RUBBER
Beryllium	0.002 mg/l	08/17/88	MIDWEST RUBBER
Beryllium	0.002 mg/l	08/24/88	MIDWEST RUBBER
Beryllium	0.002 mg/l	08/31/88	MIDWEST RUBBER
Beryllium	0.001 mg/l	10/04/88	MIDWEST RUBBER
Beryllium	0.001 mg/l	10/12/88	MIDWEST RUBBER
Beryllium	0.001 mg/l	10/18/88	MIDWEST RUBBER
Beryllium	0.001 mg/l	10/26/88	MIDWEST RUBBER
Beryllium	0.000 mg/l	02/21/89	MIDWEST RUBBER
Beryllium	0.000 mg/l	04/12/89	MONSANTO
Beryllium	0.000 mg/l	03/15/89	MONSANTO
Beryllium	0.000 mg/l	02/15/89	MONSANTO
Beryllium	0.000 mg/l	01/18/89	MONSANTO

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Beryllium	0.000 mg/l	12/14/88	MONSANTO
Beryllium	0.130 mg/l	11/09/88	MONSANTO
Beryllium	0.006 mg/l	10/06/88	MONSANTO
Beryllium	0.011 mg/l	10/13/88	MONSANTO
Beryllium	0.000 mg/l	10/12/88	MONSANTO
Beryllium	0.000 mg/l	09/14/88	MONSANTO
Beryllium	0.000 mg/l	08/10/88	MONSANTO
Beryllium	0.000 mg/l	07/13/88	MONSANTO
Beryllium	0.000 mg/l	04/18/89	MUSICK
Beryllium	0.000 mg/l	03/21/89	MUSICK
Beryllium	0.010 mg/l	01/04/89	MUSICK
Beryllium	0.010 mg/l	11/21/88	MUSICK
Beryllium	0.000 mg/l	04/19/89	PFIZER-SE
Beryllium	0.000 mg/l	03/21/89	PFIZER-SE
Beryllium	0.000 mg/l	02/27/89	PFIZER-SE
Beryllium	0.005 mg/l	12/09/88	PFIZER-SE
Beryllium	0.005 mg/l	12/15/88	PFIZER-SE
Beryllium	0.005 mg/l	12/20/88	PFIZER-SE
Beryllium	0.007 mg/l	12/28/88	PFIZER-SE
Beryllium	0.005 mg/l	10/03/88	PFIZER-SE
Beryllium	0.005 mg/l	10/12/88	PFIZER-SE
Beryllium	0.005 mg/l	10/19/88	PFIZER-SE
Beryllium	0.006 mg/l	10/27/88	PFIZER-SE
Beryllium	0.006 mg/l	07/05/88	PFIZER-SE
Beryllium	0.006 mg/l	07/12/88	PFIZER-SE
Beryllium	0.006 mg/l	07/21/88	PFIZER-SE
Beryllium	0.012 mg/l	07/27/88	PFIZER-SE
Beryllium	0.000 mg/l	04/19/89	PFIZER-SW
Beryllium	0.000 mg/l	03/21/89	PFIZER-SW
Beryllium	0.000 mg/l	02/27/89	PFIZER-SW
Beryllium	0.005 mg/l	12/09/88	PFIZER-SW
Beryllium	0.005 mg/l	12/15/88	PFIZER-SW
Beryllium	0.005 mg/l	12/20/88	PFIZER-SW
Beryllium	0.005 mg/l	12/28/88	PFIZER-SW
Beryllium	0.005 mg/l	10/03/88	PFIZER-SW
Beryllium	0.005 mg/l	10/12/88	PFIZER-SW
Beryllium	0.005 mg/l	10/19/88	PFIZER-SW
Beryllium	0.005 mg/l	10/27/88	PFIZER-SW
Beryllium	0.006 mg/l	07/05/88	PFIZER-SW
Beryllium	0.006 mg/l	07/12/88	PFIZER-SW
Beryllium	0.006 mg/l	07/21/88	PFIZER-SW
Beryllium	0.006 mg/l	07/27/88	PFIZER-SW
Beryllium	0.000 mg/l	04/12/89	ROGERS CARTAGE
Beryllium	0.000 mg/l	03/15/89	ROGERS CARTAGE
Beryllium	0.000 mg/l	04/12/89	TRADE WASTE
Beryllium	0.000 mg/l	03/15/89	TRADE WASTE
Boron	0.110 mg/l	04/12/89	BIG RIVER ZINC
Boron	0.200 mg/l	03/15/89	BIG RIVER ZINC
Boron	0.360 mg/l	04/12/89	CERRO-EAST
Boron	1.100 mg/l	03/15/89	CERRO-EAST
Boron	0.060 mg/l	04/12/89	CERRO-WEST
Boron	0.260 mg/l	03/15/89	CERRO-WEST
Boron	0.120 mg/l	04/12/89	CLAYTON
Boron	0.290 mg/l	03/15/89	CLAYTON

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Boron	0.240 mg/l	04/12/89	ETHYL
Boron	1.200 mg/l	03/15/89	ETHYL
Boron	0.510 mg/l	04/12/89	MIDWEST RUBBER
Boron	0.560 mg/l	03/15/89	MIDWEST RUBBER
Boron	0.000 mg/l	04/12/89	MONSANTO
Boron	0.077 mg/l	03/15/89	MONSANTO
Boron	0.083 mg/l	02/15/89	MONSANTO
Boron	0.071 mg/l	01/18/89	MONSANTO
Boron	0.159 mg/l	12/14/88	MONSANTO
Boron	0.000 mg/l	11/09/88	MONSANTO
Boron	0.232 mg/l	10/12/88	MONSANTO
Boron	0.121 mg/l	09/14/88	MONSANTO
Boron	0.169 mg/l	08/10/88	MONSANTO
Boron	0.158 mg/l	07/13/88	MONSANTO
Boron	0.018 mg/l	04/12/89	ROGERS CARTAGE
Boron	0.042 mg/l	03/15/89	ROGERS CARTAGE
Boron	1.900 mg/l	04/12/89	TRADE WASTE
Boron	0.850 mg/l	03/15/89	TRADE WASTE
Bromodichloromethane	4. ug/l	03/15/89	BIG RIVER ZINC
Bromodichloromethane	6. ug/l	03/21/89	MUSICK
Bromodichloromethane	4. ug/l	03/21/89	PFIZER-SW
Butoxyethanol Phosphate	300. ug/l	03/15/89	TRADE WASTE
Butoxyethoxyethanol	700. ug/l	03/15/89	BIG RIVER ZINC
Butoxyethoxyethanol	700. ug/l	03/15/89	CERRO-EAST
Butoxyethoxyethanol	400. ug/l	03/15/89	CERRO-WEST
Butoxyethoxyethanol	300. ug/l	03/21/89	MUSICK
Butoxyethoxyethanol	200. ug/l	03/21/89	PFIZER-SE
Butoxyethoxyethanol	1000. ug/l	03/21/89	PFIZER-SW
Butoxyethoxyethanol	1000. ug/l	03/15/89	ROGERS CARTAGE
Butoxyethoxyethanol	400. ug/l	03/15/89	TRADE WASTE
Butylbenzylphthalate	3. ug/l	04/12/89	BIG RIVER ZINC
Butylbenzylphthalate	3. ug/l	03/15/89	CLAYTON
Butylbenzylphthalate	4. ug/l	03/21/89	PFIZER-SE
Butylbenzylphthalate	1700. ug/l	04/12/89	ROGERS CARTAGE
Butylbenzylphthalate	2500. ug/l	03/15/89	ROGERS CARTAGE
Butylbenzylphthalate	0.900 ug/l	04/12/89	TRADE WASTE
C3-Benzene	70. ug/l	04/12/89	CLAYTON
C3-Benzene	50. ug/l	04/12/89	CLAYTON
C3-Benzene	70. ug/l	04/12/89	MIDWEST RUBBER

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
C3-Benzene	60. ug/l	04/12/89	MIDWEST RUBBER
COD	42.000 mg/l	04/12/89	BIG RIVER ZINC
COD	25.000 mg/l	03/15/89	BIG RIVER ZINC
COD	500.000 mg/l	04/12/89	CERRO-EAST
COD	720.000 mg/l	03/15/89	CERRO-EAST
COD	30.000 mg/l	04/12/89	CERRO-WEST
COD	70.000 mg/l	03/15/89	CERRO-WEST
COD	5100.000 mg/l	04/12/89	CLAYTON
COD	900.000 mg/l	03/15/89	CLAYTON
COD	1400.000 mg/l	04/12/89	ETHYL
COD	5900.000 mg/l	03/15/89	ETHYL
COD	850.000 mg/l	04/12/89	MIDWEST RUBBER
COD	3100.000 mg/l	03/15/89	MIDWEST RUBBER
COD	550.000 mg/l	04/12/89	MONSANTO
COD	550.000 mg/l	04/12/89	MONSANTO
COD	500.000 mg/l	03/15/89	MONSANTO
COD	480.000 mg/l	02/15/89	MONSANTO
COD	520.000 mg/l	01/18/89	MONSANTO
COD	770.000 mg/l	12/14/88	MONSANTO
COD	410.000 mg/l	11/09/88	MONSANTO
COD	440.000 mg/l	10/12/88	MONSANTO
COD	420.000 mg/l	09/14/88	MONSANTO
COD	700.000 mg/l	08/10/88	MONSANTO
COD	480.000 mg/l	07/13/88	MONSANTO
COD	2900.000 mg/l	04/12/89	ROGERS CARTAGE
COD	900.000 mg/l	03/15/89	ROGERS CARTAGE
COD	340.000 mg/l	04/12/89	TRADE WASTE
COD	300.000 mg/l	03/15/89	TRADE WASTE
Cadmium	0.015 mg/l	03/22/89	BIG RIVER ZINC
Cadmium	0.010 mg/l	04/27/89	BIG RIVER ZINC
Cadmium	0.010 mg/l	05/01/89	BIG RIVER ZINC
Cadmium	0.000 mg/l	05/09/89	BIG RIVER ZINC
Cadmium	0.000 mg/l	05/17/89	BIG RIVER ZINC
Cadmium	0.020 mg/l	05/25/89	BIG RIVER ZINC
Cadmium	0.060 mg/l	04/12/89	BIG RIVER ZINC
Cadmium	0.038 mg/l	03/15/89	BIG RIVER ZINC
Cadmium	0.036 mg/l	02/21/89	BIG RIVER ZINC
Cadmium	0.033 mg/l	12/08/88	BIG RIVER ZINC
Cadmium	0.231 mg/l	12/15/88	BIG RIVER ZINC
Cadmium	0.163 mg/l	12/22/88	BIG RIVER ZINC
Cadmium	0.155 mg/l	12/28/88	BIG RIVER ZINC
Cadmium	0.124 mg/l	10/06/88	BIG RIVER ZINC
Cadmium	0.156 mg/l	10/10/88	BIG RIVER ZINC
Cadmium	0.160 mg/l	10/20/88	BIG RIVER ZINC
Cadmium	0.098 mg/l	10/27/88	BIG RIVER ZINC
Cadmium	0.124 mg/l	08/04/88	BIG RIVER ZINC
Cadmium	0.104 mg/l	08/12/88	BIG RIVER ZINC
Cadmium	0.058 mg/l	08/19/88	BIG RIVER ZINC
Cadmium	0.505 mg/l	08/26/88	BIG RIVER ZINC
Cadmium	0.150 mg/l	07/27/88	BIG RIVER ZINC
Cadmium	0.110 mg/l	07/31/88	BIG RIVER ZINC
Cadmium	0.270 mg/l	08/02/88	BIG RIVER ZINC
Cadmium	0.030 mg/l	08/06/88	BIG RIVER ZINC

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Cadmium	0.090 mg/l	08/10/88	BIG RIVER ZINC
Cadmium	0.070 mg/l	08/14/88	BIG RIVER ZINC
Cadmium	0.090 mg/l	08/16/88	BIG RIVER ZINC
Cadmium	0.110 mg/l	08/20/88	BIG RIVER ZINC
Cadmium	0.010 mg/l	06/02/89	BIG RIVER ZINC
Cadmium	0.010 mg/l	06/05/89	BIG RIVER ZINC
Cadmium	0.000 mg/l	06/13/89	BIG RIVER ZINC
Cadmium	1.370 mg/l	04/27/89	CERRO-EAST
Cadmium	0.190 mg/l	05/01/89	CERRO-EAST
Cadmium	0.180 mg/l	05/09/89	CERRO-EAST
Cadmium	0.050 mg/l	05/17/89	CERRO-EAST
Cadmium	0.140 mg/l	05/25/89	CERRO-EAST
Cadmium	0.360 mg/l	04/12/89	CERRO-EAST
Cadmium	0.280 mg/l	03/15/89	CERRO-EAST
Cadmium	3.900 mg/l	02/22/89	CERRO-EAST
Cadmium	4.140 mg/l	07/27/88	CERRO-EAST
Cadmium	0.460 mg/l	07/31/88	CERRO-EAST
Cadmium	1.550 mg/l	08/02/88	CERRO-EAST
Cadmium	0.330 mg/l	08/06/88	CERRO-EAST
Cadmium	2.800 mg/l	08/10/88	CERRO-EAST
Cadmium	1.350 mg/l	08/14/88	CERRO-EAST
Cadmium	3.260 mg/l	08/16/88	CERRO-EAST
Cadmium	2.660 mg/l	08/20/88	CERRO-EAST
Cadmium	7.280 mg/l	12/07/88	CERRO-EAST
Cadmium	0.680 mg/l	12/14/88	CERRO-EAST
Cadmium	2.210 mg/l	12/22/88	CERRO-EAST
Cadmium	0.420 mg/l	12/29/88	CERRO-EAST
Cadmium	0.510 mg/l	08/05/88	CERRO-EAST
Cadmium	4.790 mg/l	08/12/88	CERRO-EAST
Cadmium	1.090 mg/l	08/19/88	CERRO-EAST
Cadmium	2.200 mg/l	08/24/88	CERRO-EAST
Cadmium	2.800 mg/l	10/07/88	CERRO-EAST
Cadmium	3.180 mg/l	10/14/88	CERRO-EAST
Cadmium	2.8[illegible]0 mg/l	10/21/88	CERRO-EAST
Cadmium	5.000 mg/l	10/26/88	CERRO-EAST
Cadmium	0.000 mg/l	06/02/89	CERRO-EAST
Cadmium	0.580 mg/l	06/05/89	CERRO-EAST
Cadmium	0.220 mg/l	06/13/89	CERRO-EAST
Cadmium	0.030 mg/l	04/27/89	CERRO-WEST
Cadmium	0.060 mg/l	05/01/89	CERRO-WEST
Cadmium	0.080 mg/l	05/09/89	CERRO-WEST
Cadmium	0.010 mg/l	05/17/89	CERRO-WEST
Cadmium	0.010 mg/l	05/25/89	CERRO-WEST
Cadmium	0.004 mg/l	04/12/89	CERRO-WEST
Cadmium	0.014 mg/l	03/15/89	CERRO-WEST
Cadmium	0.035 mg/l	02/22/89	CERRO-WEST
Cadmium	3.320 mg/l	08/12/88	CERRO-WEST
Cadmium	0.120 mg/l	08/19/88	CERRO-WEST
Cadmium	0.470 mg/l	08/24/88	CERRO-WEST
Cadmium	0.020 mg/l	10/07/88	CERRO-WEST
Cadmium	0.0[illegible]0 mg/l	10/14/88	CERRO-WEST
Cadmium	3.2[illegible]0 mg/l	10/21/88	CERRO-WEST
Cadmium	0.240 mg/l	10/26/88	CERRO-WEST
Cadmium	0.0[illegible]0 mg/l	12/07/88	CERRO-WEST
Cadmium	0.020 mg/l	12/14/88	CERRO-WEST
Cadmium	0.0[illegible]0 mg/l	12/22/88	CERRO-WEST
Cadmium	0.0[illegible]0 mg/l	12/29/88	CERRO-WEST
Cadmium	0.020 mg/l	07/27/88	CERRO-WEST
Cadmium	0.660 mg/l	07/31/88	CERRO-WEST
Cadmium	0.430 mg/l	08/02/88	CERRO-WEST
Cadmium	8.920 mg/l	08/06/88	CERRO-WEST

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Cadmium	0.170 mg/l	08/10/88	CERRO-WEST
Cadmium	0.810 mg/l	08/14/88	CERRO-WEST
Cadmium	0.540 mg/l	08/16/88	CERRO-WEST
Cadmium	0.040 mg/l	08/20/88	CERRO-WEST
Cadmium	0.030 mg/l	06/02/89	CERRO-WEST
Cadmium	0.010 mg/l	06/05/89	CERRO-WEST
Cadmium	0.000 mg/l	06/13/89	CERRO-WEST
Cadmium	0.000 mg/l	04/12/89	CLAYTON
Cadmium	0.000 mg/l	03/15/89	CLAYTON
Cadmium	0.000 mg/l	07/27/88	CLAYTON
Cadmium	0.000 mg/l	07/31/88	CLAYTON
Cadmium	0.000 mg/l	08/02/88	CLAYTON
Cadmium	0.000 mg/l	08/06/88	CLAYTON
Cadmium	0.000 mg/l	08/10/88	CLAYTON
Cadmium	0.000 mg/l	08/14/88	CLAYTON
Cadmium	0.000 mg/l	08/16/88	CLAYTON
Cadmium	0.000 mg/l	08/20/88	CLAYTON
Cadmium	0.011 mg/l	04/12/89	ETHYL
Cadmium	0.008 mg/l	03/15/89	ETHYL
Cadmium	0.005 mg/l	07/07/88	ETHYL
Cadmium	0.005 mg/l	07/13/88	ETHYL
Cadmium	0.026 mg/l	07/21/88	ETHYL
Cadmium	0.047 mg/l	07/28/88	ETHYL
Cadmium	0.005 mg/l	10/06/88	ETHYL
Cadmium	0.029 mg/l	10/13/88	ETHYL
Cadmium	0.032 mg/l	10/20/88	ETHYL
Cadmium	0.012 mg/l	10/27/88	ETHYL
Cadmium	0.005 mg/l	12/09/88	ETHYL
Cadmium	0.006 mg/l	12/15/88	ETHYL
Cadmium	0.007 mg/l	12/22/88	ETHYL
Cadmium	0.004 mg/l	12/29/88	ETHYL
Cadmium	0.010 mg/l	07/27/88	ETHYL
Cadmium	0.110 mg/l	07/31/88	ETHYL
Cadmium	0.270 mg/l	08/02/88	ETHYL
Cadmium	0.030 mg/l	08/06/88	ETHYL
Cadmium	0.090 mg/l	08/10/88	ETHYL
Cadmium	0.070 mg/l	08/14/88	ETHYL
Cadmium	0.090 mg/l	08/16/88	ETHYL
Cadmium	0.110 mg/l	08/20/88	ETHYL
Cadmium	0.000 mg/l	04/18/89	LANCHEM
Cadmium	0.000 mg/l	03/21/89	LANCHEM
Cadmium	0.010 mg/l	01/26/89	LANCHEM
Cadmium	0.010 mg/l	11/01/88	LANCHEM
Cadmium	0.000 mg/l	04/12/89	MIDWEST RUBBER
Cadmium	0.000 mg/l	03/15/89	MIDWEST RUBBER
Cadmium	0.005 mg/l	08/08/88	MIDWEST RUBBER
Cadmium	0.010 mg/l	08/17/88	MIDWEST RUBBER
Cadmium	0.005 mg/l	08/24/88	MIDWEST RUBBER
Cadmium	0.005 mg/l	08/31/88	MIDWEST RUBBER
Cadmium	0.004 mg/l	10/04/88	MIDWEST RUBBER
Cadmium	0.003 mg/l	10/12/88	MIDWEST RUBBER
Cadmium	0.003 mg/l	10/18/88	MIDWEST RUBBER
Cadmium	0.002 mg/l	10/26/88	MIDWEST RUBBER
Cadmium	0.000 mg/l	02/21/89	MIDWEST RUBBER
Cadmium	0.000 mg/l	07/27/88	MIDWEST RUBBER
Cadmium	0.000 mg/l	07/31/88	MIDWEST RUBBER
Cadmium	0.000 mg/l	08/02/88	MIDWEST RUBBER
Cadmium	0.000 mg/l	08/06/88	MIDWEST RUBBER
Cadmium	0.160 mg/l	08/10/88	MIDWEST RUBBER

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Cadmium	0.000 mg/l	08/14/88	MIDWEST RUBBER
Cadmium	0.000 mg/l	08/16/88	MIDWEST RUBBER
Cadmium	0.000 mg/l	08/20/88	MIDWEST RUBBER
Cadmium	0.000 mg/l	04/12/89	MONSANTO
Cadmium	0.000 mg/l	03/15/89	MONSANTO
Cadmium	0.000 mg/l	02/15/89	MONSANTO
Cadmium	0.000 mg/l	01/18/89	MONSANTO
Cadmium	0.149 mg/l	12/14/88	MONSANTO
Cadmium	0.000 mg/l	11/09/88	MONSANTO
Cadmium	0.000 mg/l	10/12/88	MONSANTO
Cadmium	0.006 mg/l	09/14/88	MONSANTO
Cadmium	0.000 mg/l	08/10/88	MONSANTO
Cadmium	0.005 mg/l	07/13/88	MONSANTO
Cadmium	0.000 mg/l	07/27/88	MONSANTO
Cadmium	0.000 mg/l	07/31/88	MONSANTO
Cadmium	0.000 mg/l	08/02/88	MONSANTO
Cadmium	0.000 mg/l	08/06/88	MONSANTO
Cadmium	0.010 mg/l	08/10/88	MONSANTO
Cadmium	0.000 mg/l	08/14/88	MONSANTO
Cadmium	0.000 mg/l	08/16/88	MONSANTO
Cadmium	0.010 mg/l	08/20/88	MONSANTO
Cadmium	0.310 mg/l	04/18/89	MUSICK
Cadmium	0.240 mg/l	03/21/89	MUSICK
Cadmium	0.270 mg/l	05/17/89	MUSICK
Cadmium	0.113 mg/l	11/07/88	MUSICK
Cadmium	0.040 mg/l	12/05/88	MUSICK
Cadmium	0.009 mg/l	01/09/89	MUSICK
Cadmium	0.032 mg/l	02/13/89	MUSICK
Cadmium	0.170 mg/l	06/13/89	MUSICK
Cadmium	0.000 mg/l	04/19/89	PFIZER-SE
Cadmium	0.000 mg/l	03/21/89	PFIZER-SE
Cadmium	0.000 mg/l	02/27/89	PFIZER-SE
Cadmium	0.002 mg/l	12/09/88	PFIZER-SE
Cadmium	0.002 mg/l	12/15/88	PFIZER-SE
Cadmium	0.002 mg/l	12/20/88	PFIZER-SE
Cadmium	0.002 mg/l	12/28/88	PFIZER-SE
Cadmium	0.002 mg/l	10/03/88	PFIZER-SE
Cadmium	0.002 mg/l	10/12/88	PFIZER-SE
Cadmium	0.002 mg/l	10/19/88	PFIZER-SE
Cadmium	0.003 mg/l	10/27/88	PFIZER-SE
Cadmium	0.010 mg/l	07/05/88	PFIZER-SE
Cadmium	0.004 mg/l	07/12/88	PFIZER-SE
Cadmium	0.005 mg/l	07/21/88	PFIZER-SE
Cadmium	0.008 mg/l	07/27/88	PFIZER-SE
Cadmium	0.000 mg/l	04/19/89	PFIZER-SW
Cadmium	0.000 mg/l	03/21/89	PFIZER-SW
Cadmium	0.000 mg/l	02/27/89	PFIZER-SW
Cadmium	0.002 mg/l	12/09/88	PFIZER-SW
Cadmium	0.002 mg/l	12/15/88	PFIZER-SW
Cadmium	0.002 mg/l	12/20/88	PFIZER-SW
Cadmium	0.002 mg/l	12/28/88	PFIZER-SW
Cadmium	0.002 mg/l	10/03/88	PFIZER-SW
Cadmium	0.002 mg/l	10/12/88	PFIZER-SW
Cadmium	0.002 mg/l	10/19/88	PFIZER-SW
Cadmium	0.002 mg/l	10/27/88	PFIZER-SW
Cadmium	0.003 mg/l	07/05/88	PFIZER-SW
Cadmium	0.002 mg/l	07/12/88	PFIZER-SW
Cadmium	0.002 mg/l	07/21/88	PFIZER-SW
Cadmium	0.002 mg/l	07/27/88	PFIZER-SW

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Cadmium	0.000 mg/l	04/12/89	ROGERS CARTAGE
Cadmium	0.000 mg/l	03/15/89	ROGERS CARTAGE
Cadmium	0.000 mg/l	07/27/88	ROGERS CARTAGE
Cadmium	0.000 mg/l	07/31/88	ROGERS CARTAGE
Cadmium	0.000 mg/l	08/02/88	ROGERS CARTAGE
Cadmium	0.000 mg/l	08/06/88	ROGERS CARTAGE
Cadmium	0.000 mg/l	08/10/88	ROGERS CARTAGE
Cadmium	0.000 mg/l	08/14/88	ROGERS CARTAGE
Cadmium	0.020 mg/l	08/16/88	ROGERS CARTAGE
Cadmium	0.000 mg/l	08/20/88	ROGERS CARTAGE
Cadmium	0.370 mg/l	04/12/89	TRADE WASTE
Cadmium	0.010 mg/l	03/15/89	TRADE WASTE
Cadmium	2.130 mg/l	07/27/88	TRADE WASTE
Cadmium	0.320 mg/l	07/31/88	TRADE WASTE
Cadmium	3.510 mg/l	08/02/88	TRADE WASTE
Cadmium	5.930 mg/l	08/06/88	TRADE WASTE
Cadmium	4.510 mg/l	08/10/88	TRADE WASTE
Cadmium	1.700 mg/l	08/14/88	TRADE WASTE
Cadmium	3.850 mg/l	08/16/88	TRADE WASTE
Cadmium	0.280 mg/l	08/20/88	TRADE WASTE
Cadmium (avg)(1)	0.030 mg/l	04/88	PFIZER-SE
Cadmium (avg)(1)	0.010 mg/l	03/88	PFIZER-SE
Cadmium (avg)(1)	0.010 mg/l	02/88	PFIZER-SE
Cadmium (avg)(1)	0.000 mg/l	04/88	PFIZER-SW
Cadmium (avg)(1)	0.000 mg/l	03/88	PFIZER-SW
Cadmium (avg)(1)	0.000 mg/l	02/88	PFIZER-SW
Caffeine	20. ug/l	04/12/89	TRADE WASTE
Caffeine	10. ug/l	03/15/89	TRADE WASTE
Carbon Tetrachloride	84. ug/l	04/12/89	CERRO-WEST
Chloride (avg)(1)	2354.000 mg/l	03/88	PFIZER-SE
Chloride (avg)(1)	2825.000 mg/l	02/88	PFIZER-SE
Chlorides, total	200.000 mg/l	04/12/89	BIG RIVER ZINC
Chlorides, total	394.000 mg/l	03/15/89	BIG RIVER ZINC
Chlorides, total	300.000 mg/l	04/12/89	CERRO-EAST
Chlorides, total	278.000 mg/l	03/15/89	CERRO-EAST
Chlorides, total	4.200 mg/l	04/12/89	CERRO-WEST
Chlorides, total	86.000 mg/l	03/15/89	CERRO-WEST
Chlorides, total	100.000 mg/l	04/12/89	CLAYTON
Chlorides, total	174.000 mg/l	03/15/89	CLAYTON
Chlorides, total	3600.000 mg/l	04/12/89	ETHYL
Chlorides, total	5170.000 mg/l	03/15/89	ETHYL
Chlorides, total	78.000 mg/l	04/12/89	MIDWEST RUBBER
Chlorides, total	223.000 mg/l	03/15/89	MIDWEST RUBBER
Chlorides, total	3500.000 mg/l	04/12/89	MONSANTO
Chlorides, total	3500.000 mg/l	04/12/89	MONSANTO
Chlorides, total	3100.000 mg/l	03/15/89	MONSANTO
Chlorides, total	4500.000 mg/l	02/15/89	MONSANTO
Chlorides, total	3100.000 mg/l	01/18/89	MONSANTO

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Chlorides, total	2300.000 mg/l	12/14/88	MONSANTO
Chlorides, total	2600.000 mg/l	11/09/88	MONSANTO
Chlorides, total	1800.000 mg/l	10/12/88	MONSANTO
Chlorides, total	2200.000 mg/l	09/14/88	MONSANTO
Chlorides, total	3200.000 mg/l	08/10/88	MONSANTO
Chlorides, total	1200.000 mg/l	07/13/88	MONSANTO
Chlorides, total	48.000 mg/l	04/12/89	ROGERS CARTAGE
Chlorides, total	66.000 mg/l	03/15/89	ROGERS CARTAGE
Chlorides, total	2000.000 mg/l	04/12/89	TRADE WASTE
Chlorides, total	580.000 mg/l	03/15/89	TRADE WASTE
Chlorine, tot. res.	0.000 mg/l	04/12/89	BIG RIVER ZINC
Chlorine, tot. res.	0.000 mg/l	03/15/89	BIG RIVER ZINC
Chlorine, tot. res.	0.000 mg/l	04/12/89	CERRO-EAST
Chlorine, tot. res.	0.150 mg/l	03/15/89	CERRO-EAST
Chlorine, tot. res.	0.000 mg/l	04/12/89	CERRO-WEST
Chlorine, tot. res.	0.100 mg/l	03/15/89	CERRO-WEST
Chlorine, tot. res.	0.300 mg/l	04/12/89	CLAYTON
Chlorine, tot. res.	0.000 mg/l	03/15/89	CLAYTON
Chlorine, tot. res.	0.000 mg/l	04/12/89	ETHYL
Chlorine, tot. res.	0.000 mg/l	03/15/89	ETHYL
Chlorine, tot. res.	0.100 mg/l	04/12/89	MIDWEST RUBBER
Chlorine, tot. res.	0.200 mg/l	03/15/89	MIDWEST RUBBER
Chlorine, tot. res.	0.000 mg/l	04/12/89	MONSANTO
Chlorine, tot. res.	0.000 mg/l	04/12/89	MONSANTO
Chlorine, tot. res.	0.000 mg/l	03/15/89	MONSANTO
Chlorine, tot. res.	0.000 mg/l	02/15/89	MONSANTO
Chlorine, tot. res.	0.000 mg/l	01/18/89	MONSANTO
Chlorine, tot. res.	0.100 mg/l	12/14/88	MONSANTO
Chlorine, tot. res.	0.000 mg/l	11/09/88	MONSANTO
Chlorine, tot. res.	0.000 mg/l	10/12/88	MONSANTO
Chlorine, tot. res.	0.800 mg/l	09/14/88	MONSANTO
Chlorine, tot. res.	0.700 mg/l	08/10/88	MONSANTO
Chlorine, tot. res.	0.600 mg/l	07/13/88	MONSANTO
Chlorine, tot. res.	0.500 mg/l	04/12/89	ROGERS CARTAGE
Chlorine, tot. res.	0.700 mg/l	03/15/89	ROGERS CARTAGE
Chlorine, tot. res.	0.000 mg/l	04/12/89	TRADE WASTE
Chlorine, tot. res.	0.600 mg/l	03/15/89	TRADE WASTE
Chloroaniline	800. ug/l	03/15/89	MONSANTO
Chloroaniline	300. ug/l	02/15/89	MONSANTO
Chloroaniline	200. ug/l	12/14/88	MONSANTO
Chloroaniline	260. ug/l	07/13/88	MONSANTO
Chlorobenzene	4. ug/l	04/12/89	MIDWEST RUBBER
Chlorobenzene	3100. ug/l	04/12/89	MONSANTO
Chlorobenzene	2000. ug/l	04/12/89	MONSANTO
Chlorobenzene	4300. ug/l	03/15/89	MONSANTO
Chlorobenzene	1000. ug/l	03/15/89	MONSANTO
Chlorobenzene	3400. ug/l	02/15/89	MONSANTO
Chlorobenzene	2000. ug/l	02/15/89	MONSANTO
Chlorobenzene	12000. ug/l	01/18/89	MONSANTO

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APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION		SAMPLING DATE	INDUSTRY
Chlorobenzene	4490.	ug/l	12/14/88	MONSANTO
Chlorobenzene	25000.	ug/l	12/14/88	MONSANTO
Chlorobenzene	600.	ug/l	12/14/88	MONSANTO
Chlorobenzene	20000.	ug/l	11/09/88	MONSANTO
Chlorobenzene	1400.	ug/l	11/09/88	MONSANTO
Chlorobenzene	2600.	ug/l	10/12/88	MONSANTO
Chlorobenzene	2100.	ug/l	10/12/88	MONSANTO
Chlorobenzene	4400.	ug/l	09/14/88	MONSANTO
Chlorobenzene	2400.	ug/l	09/14/88	MONSANTO
Chlorobenzene	1610.	ug/l	08/15/88	MONSANTO
Chlorobenzene	5000.	ug/l	08/10/88	MONSANTO
Chlorobenzene	900.	ug/l	08/10/88	MONSANTO
Chlorobenzene	6200.	ug/l	07/13/88	MONSANTO
Chlorobenzene	540.	ug/l	07/13/88	MONSANTO
Chlorobenzene	2900.	ug/l	04/12/89	ROGERS CARTAGE
Chlorobenzene	24000.	ug/l	03/15/89	ROGERS CARTAGE
Chlorobenzene	2000.	ug/l	03/15/89	ROGERS CARTAGE
Chloroform	9.	ug/l	04/12/89	BIG RIVER ZINC
Chloroform	18.	ug/l	03/15/89	BIG RIVER ZINC
Chloroform	6.	ug/l	04/12/89	CERRO-EAST
Chloroform	10.	ug/l	04/12/89	CERRO-EAST
Chloroform	23.	ug/l	03/15/89	CERRO-EAST
Chloroform	24.	ug/l	03/15/89	CERRO-WEST
Chloroform	8.	ug/l	04/12/89	MIDWEST RUBBER
Chloroform	120.	ug/l	03/15/89	MONSANTO
Chloroform	42.	ug/l	02/15/89	MONSANTO
Chloroform	100.	ug/l	11/09/88	MONSANTO
Chloroform	240.	ug/l	03/21/89	MUSICK
Chloroform	56.	ug/l	04/05/89	MUSICK
Chloroform	29.	ug/l	12/28/89	MUSICK
Chloroform	3.	ug/l	03/21/89	PFIZER-SE
Chloroform	18.	ug/l	03/21/89	PFIZER-SW
Chloroform	12.	ug/l	04/12/89	TRADE WASTE
Chloroform	23.	ug/l	04/12/89	TRADE WASTE
Chloroform	48.	ug/l	03/15/89	TRADE WASTE
Chloromethane	21.	ug/l	04/05/89	MUSICK
Chloromethane	2.	ug/l	12/28/89	MUSICK
Chloronitrobenzene	600.	ug/l	04/12/89	MONSANTO
Chloronitrobenzene	9000.	ug/l	04/12/89	MONSANTO
Chloronitrobenzene	4000.	ug/l	04/12/89	MONSANTO
Chloronitrobenzene	700.	ug/l	03/15/89	MONSANTO
Chloronitrobenzene	7000.	ug/l	03/15/89	MONSANTO
Chloronitrobenzene	4000.	ug/l	03/15/89	MONSANTO
Chloronitrobenzene	900.	ug/l	02/15/89	MONSANTO
Chloronitrobenzene	8000.	ug/l	02/15/89	MONSANTO
Chloronitrobenzene	5000.	ug/l	02/15/89	MONSANTO
Chloronitrobenzene	300.	ug/l	12/14/88	MONSANTO
Chloronitrobenzene	3000.	ug/l	12/14/88	MONSANTO
Chloronitrobenzene	1000.	ug/l	12/14/88	MONSANTO
Chloronitrobenzene	450.	ug/l	11/09/88	MONSANTO
Chloronitrobenzene	4600.	ug/l	11/09/88	MONSANTO

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Chloronitrobenzene	2500. ug/l	11/09/88	MONSANTO
Chloronitrobenzene	300. ug/l	10/12/88	MONSANTO
Chloronitrobenzene	2300. ug/l	10/12/88	MONSANTO
Chloronitrobenzene	1400. ug/l	10/12/88	MONSANTO
Chloronitrobenzene	8800. ug/l	09/14/88	MONSANTO
Chloronitrobenzene	4200. ug/l	08/10/88	MONSANTO
Chloronitrobenzene	630. ug/l	07/13/88	MONSANTO
Chloronitrobenzene	8400. ug/l	07/13/88	MONSANTO
Chloronitrobenzene	6700. ug/l	07/13/88	MONSANTO
Chloronitrobenzene	1000. ug/l	03/15/89	ROGERS CARTAGE
Chromium (avg)(1)	2.170 mg/l	04/88	PFIZER-SE
Chromium (avg)(1)	0.910 mg/l	03/88	PFIZER-SE
Chromium (avg)(1)	1.210 mg/l	02/88	PFIZER-SE
Chromium (avg)(1)	0.020 mg/l	04/88	PFIZER-SW
Chromium (avg)(1)	0.080 mg/l	03/88	PFIZER-SW
Chromium (avg)(1)	0.010 mg/l	02/88	PFIZER-SW
Chromium, Hexavalent	0.000 mg/l	04/12/89	BIG RIVER ZINC
Chromium, Hexavalent	0.000 mg/l	03/15/89	BIG RIVER ZINC
Chromium, Hexavalent	0.000 mg/l	04/12/89	CERRO-EAST
Chromium, Hexavalent	0.000 mg/l	03/15/89	CERRO-EAST
Chromium, Hexavalent	0.000 mg/l	04/12/89	CERRO-WEST
Chromium, Hexavalent	0.000 mg/l	03/15/89	CERRO-WEST
Chromium, Hexavalent	0.000 mg/l	04/12/89	CLAYTON
Chromium, Hexavalent	0.000 mg/l	03/15/89	CLAYTON
Chromium, Hexavalent	0.000 mg/l	04/12/89	ETHYL
Chromium, Hexavalent	0.000 mg/l	03/15/89	ETHYL
Chromium, Hexavalent	0.000 mg/l	04/12/89	MIDWEST RUBBER
Chromium, Hexavalent	0.000 mg/l	03/15/89	MIDWEST RUBBER
Chromium, Hexavalent	0.000 mg/l	04/12/89	MONSANTO
Chromium, Hexavalent	0.000 mg/l	04/12/89	MONSANTO
Chromium, Hexavalent	0.000 mg/l	03/15/89	MONSANTO
Chromium, Hexavalent	0.000 mg/l	02/15/89	MONSANTO
Chromium, Hexavalent	0.000 mg/l	01/18/89	MONSANTO
Chromium, Hexavalent	0.000 mg/l	11/09/88	MONSANTO
Chromium, Hexavalent	0.000 mg/l	10/12/88	MONSANTO
Chromium, Hexavalent	0.000 mg/l	09/14/88	MONSANTO
Chromium, Hexavalent	0.000 mg/l	08/10/88	MONSANTO
Chromium, Hexavalent	0.000 mg/l	07/13/88	MONSANTO
Chromium, Hexavalent	0.000 mg/l	04/12/89	ROGERS CARTAGE
Chromium, Hexavalent	0.000 mg/l	03/15/89	ROGERS CARTAGE
Chromium, Hexavalent	1.500 mg/l	04/12/89	TRADE WASTE
Chromium, Hexavalent	0.280 mg/l	03/15/89	TRADE WASTE
Chromium, Total	0.000 mg/l	04/12/89	BIG RIVER ZINC
Chromium, Total	0.000 mg/l	03/15/89	BIG RIVER ZINC
Chromium, Total	0.000 mg/l	02/21/89	BIG RIVER ZINC
Chromium, Total	0.044 mg/l	12/08/88	BIG RIVER ZINC
Chromium, Total	0.012 mg/l	12/15/88	BIG RIVER ZINC
Chromium, Total	0.014 mg/l	12/22/88	BIG RIVER ZINC
Chromium, Total	0.014 mg/l	12/28/88	BIG RIVER ZINC
Chromium, Total	0.025 mg/l	10/06/88	BIG RIVER ZINC

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EPA/CERRO ~~COPPER/EIL/PCB ATTORNEY WORK PRODUCT~~ / ~~ATTORNEY CLIENT PRIVILEGE~~

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Chromium, Total	0.027 mg/l	10/10/88	BIG RIVER ZINC
Chromium, Total	0.023 mg/l	10/20/88	BIG RIVER ZINC
Chromium, Total	0.016 mg/l	10/27/88	BIG RIVER ZINC
Chromium, Total	0.026 mg/l	08/04/88	BIG RIVER ZINC
Chromium, Total	0.021 mg/l	08/12/88	BIG RIVER ZINC
Chromium, Total	0.027 mg/l	08/19/88	BIG RIVER ZINC
Chromium, Total	0.029 mg/l	08/26/88	BIG RIVER ZINC
Chromium, Total	0.080 mg/l	04/27/89	CERRO-EAST
Chromium, Total	0.080 mg/l	05/01/89	CERRO-EAST
Chromium, Total	0.160 mg/l	05/09/89	CERRO-EAST
Chromium, Total	0.110 mg/l	05/17/89	CERRO-EAST
Chromium, Total	0.110 mg/l	05/25/89	CERRO-EAST
Chromium, Total	0.740 mg/l	04/12/89	CERRO-EAST
Chromium, Total	0.140 mg/l	03/15/89	CERRO-EAST
Chromium, Total	0.770 mg/l	02/22/89	CERRO-EAST
Chromium, Total	0.270 mg/l	12/07/88	CERRO-EAST
Chromium, Total	0.080 mg/l	12/14/88	CERRO-EAST
Chromium, Total	0.650 mg/l	12/22/88	CERRO-EAST
Chromium, Total	0.240 mg/l	12/29/88	CERRO-EAST
Chromium, Total	0.130 mg/l	08/05/88	CERRO-EAST
Chromium, Total	0.200 mg/l	08/12/88	CERRO-EAST
Chromium, Total	0.240 mg/l	08/19/88	CERRO-EAST
Chromium, Total	0.590 mg/l	08/24/88	CERRO-EAST
Chromium, Total	0.470 mg/l	10/07/88	CERRO-EAST
Chromium, Total	0.440 mg/l	10/14/88	CERRO-EAST
Chromium, Total	0.340 mg/l	10/21/88	CERRO-EAST
Chromium, Total	0.360 mg/l	10/26/88	CERRO-EAST
Chromium, Total	0.040 mg/l	06/02/89	CERRO-EAST
Chromium, Total	0.270 mg/l	06/05/89	CERRO-EAST
Chromium, Total	0.030 mg/l	06/13/89	CERRO-EAST
Chromium, Total	0.080 mg/l	04/27/89	CERRO-WEST
Chromium, Total	0.060 mg/l	05/01/89	CERRO-WEST
Chromium, Total	0.080 mg/l	05/09/89	CERRO-WEST
Chromium, Total	0.060 mg/l	05/17/89	CERRO-WEST
Chromium, Total	0.060 mg/l	05/25/89	CERRO-WEST
Chromium, Total	0.110 mg/l	04/12/89	CERRO-WEST
Chromium, Total	0.170 mg/l	03/15/89	CERRO-WEST
Chromium, Total	0.090 mg/l	02/22/89	CERRO-WEST
Chromium, Total	5.060 mg/l	08/12/88	CERRO-WEST
Chromium, Total	0.050 mg/l	08/19/88	CERRO-WEST
Chromium, Total	0.190 mg/l	08/24/88	CERRO-WEST
Chromium, Total	0.080 mg/l	10/07/88	CERRO-WEST
Chromium, Total	0.060 mg/l	10/14/88	CERRO-WEST
Chromium, Total	0.620 mg/l	10/21/88	CERRO-WEST
Chromium, Total	0.100 mg/l	10/26/88	CERRO-WEST
Chromium, Total	0.090 mg/l	12/07/88	CERRO-WEST
Chromium, Total	0.050 mg/l	12/14/88	CERRO-WEST
Chromium, Total	1.110 mg/l	12/22/88	CERRO-WEST
Chromium, Total	0.560 mg/l	12/29/88	CERRO-WEST
Chromium, Total	0.040 mg/l	06/02/89	CERRO-WEST
Chromium, Total	0.040 mg/l	06/05/89	CERRO-WEST
Chromium, Total	0.000 mg/l	06/13/89	CERRO-WEST
Chromium, Total	0.035 mg/l	04/12/89	CLAYTON
Chromium, Total	0.054 mg/l	03/15/89	CLAYTON
Chromium, Total	0.560 mg/l	04/12/89	ETHYL
Chromium, Total	0.860 mg/l	03/15/89	ETHYL
Chromium, Total	0.416 mg/l	07/07/88	ETHYL
Chromium, Total	0.519 mg/l	07/13/88	ETHYL
Chromium, Total	0.492 mg/l	07/21/88	ETHYL

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APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Chromium, Total	0.392 mg/l	07/28/88	ETHYL
Chromium, Total	0.300 mg/l	10/06/88	ETHYL
Chromium, Total	0.765 mg/l	10/13/88	ETHYL
Chromium, Total	0.621 mg/l	10/20/88	ETHYL
Chromium, Total	0.559 mg/l	10/27/88	ETHYL
Chromium, Total	0.440 mg/l	12/09/88	ETHYL
Chromium, Total	0.438 mg/l	12/15/88	ETHYL
Chromium, Total	0.230 mg/l	12/22/88	ETHYL
Chromium, Total	0.439 mg/l	12/29/88	ETHYL
Chromium, Total	0.074 mg/l	04/18/89	LANCHEM
Chromium, Total	0.000 mg/l	03/21/89	LANCHEM
Chromium, Total	0.370 mg/l	01/26/89	LANCHEM
Chromium, Total	0.150 mg/l	11/01/88	LANCHEM
Chromium, Total	0.000 mg/l	04/12/89	MIDWEST RUBBER
Chromium, Total	0.000 mg/l	03/15/89	MIDWEST RUBBER
Chromium, Total	0.010 mg/l	08/08/88	MIDWEST RUBBER
Chromium, Total	0.010 mg/l	08/17/88	MIDWEST RUBBER
Chromium, Total	0.010 mg/l	08/24/88	MIDWEST RUBBER
Chromium, Total	0.010 mg/l	08/31/88	MIDWEST RUBBER
Chromium, Total	0.037 mg/l	10/04/88	MIDWEST RUBBER
Chromium, Total	0.066 mg/l	10/12/88	MIDWEST RUBBER
Chromium, Total	0.053 mg/l	10/18/88	MIDWEST RUBBER
Chromium, Total	0.033 mg/l	10/26/88	MIDWEST RUBBER
Chromium, Total	0.000 mg/l	02/21/89	MIDWEST RUBBER
Chromium, Total	0.079 mg/l	04/12/89	MONSANTO
Chromium, Total	0.150 mg/l	03/15/89	MONSANTO
Chromium, Total	0.390 mg/l	02/15/89	MONSANTO
Chromium, Total	0.203 mg/l	01/18/89	MONSANTO
Chromium, Total	0.093 mg/l	12/07/88	MONSANTO
Chromium, Total	0.211 mg/l	12/14/88	MONSANTO
Chromium, Total	0.157 mg/l	12/19/88	MONSANTO
Chromium, Total	0.117 mg/l	12/27/88	MONSANTO
Chromium, Total	0.149 mg/l	12/14/88	MONSANTO
Chromium, Total	0.063 mg/l	11/09/88	MONSANTO
Chromium, Total	0.174 mg/l	10/06/88	MONSANTO
Chromium, Total	0.060 mg/l	10/13/88	MONSANTO
Chromium, Total	0.100 mg/l	10/18/88	MONSANTO
Chromium, Total	0.750 mg/l	10/26/88	MONSANTO
Chromium, Total	0.105 mg/l	10/12/88	MONSANTO
Chromium, Total	0.101 mg/l	09/14/88	MONSANTO
Chromium, Total	0.430 mg/l	08/15/88	MONSANTO
Chromium, Total	0.130 mg/l	08/23/88	MONSANTO
Chromium, Total	0.120 mg/l	08/29/88	MONSANTO
Chromium, Total	0.290 mg/l	09/06/88	MONSANTO
Chromium, Total	0.306 mg/l	08/10/88	MONSANTO
Chromium, Total	0.058 mg/l	07/13/88	MONSANTO
Chromium, Total	2.860 mg/l	04/18/89	MUSICK
Chromium, Total	3.500 mg/l	03/21/89	MUSICK
Chromium, Total	2.190 mg/l	05/17/89	MUSICK
Chromium, Total	2.810 mg/l	11/07/88	MUSICK
Chromium, Total	0.060 mg/l	12/05/88	MUSICK
Chromium, Total	0.940 mg/l	01/09/89	MUSICK
Chromium, Total	0.680 mg/l	02/13/89	MUSICK
Chromium, Total	3.780 mg/l	06/13/89	MUSICK
Chromium, Total	0.0[illegible]3 mg/l	04/19/89	PFIZER-SE
Chromium, Total	0.1[illegible]0 mg/l	03/21/89	PFIZER-SE
Chromium, Total	98.0[illegible]0 mg/l	02/27/89	PFIZER-SE
Chromium, Total	0.066 mg/l	12/09/88	PFIZER-SE

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APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Chromium, Total	0.012 mg/l	12/15/88	PFIZER-SE
Chromium, Total	0.010 mg/l	12/20/88	PFIZER-SE
Chromium, Total	0.340 mg/l	12/28/88	PFIZER-SE
Chromium, Total	0.042 mg/l	10/03/88	PFIZER-SE
Chromium, Total	0.022 mg/l	10/12/88	PFIZER-SE
Chromium, Total	0.061 mg/l	10/19/88	PFIZER-SE
Chromium, Total	0.053 mg/l	10/27/88	PFIZER-SE
Chromium, Total	0.175 mg/l	07/05/88	PFIZER-SE
Chromium, Total	0.148 mg/l	07/12/88	PFIZER-SE
Chromium, Total	0.074 mg/l	07/21/88	PFIZER-SE
Chromium, Total	0.981 mg/l	07/27/88	PFIZER-SE
Chromium, Total	0.000 mg/l	04/19/89	PFIZER-SW
Chromium, Total	0.000 mg/l	03/21/89	PFIZER-SW
Chromium, Total	0.051 mg/l	02/27/89	PFIZER-SW
Chromium, Total	0.031 mg/l	12/09/88	PFIZER-SW
Chromium, Total	0.005 mg/l	12/15/88	PFIZER-SW
Chromium, Total	0.006 mg/l	12/20/88	PFIZER-SW
Chromium, Total	0.013 mg/l	12/28/88	PFIZER-SW
Chromium, Total	0.035 mg/l	10/03/88	PFIZER-SW
Chromium, Total	0.008 mg/l	10/12/88	PFIZER-SW
Chromium, Total	0.008 mg/l	10/19/88	PFIZER-SW
Chromium, Total	0.004 mg/l	10/27/88	PFIZER-SW
Chromium, Total	0.006 mg/l	07/05/88	PFIZER-SW
Chromium, Total	0.015 mg/l	07/12/88	PFIZER-SW
Chromium, Total	0.005 mg/l	07/21/88	PFIZER-SW
Chromium, Total	0.029 mg/l	07/27/88	PFIZER-SW
Chromium, Total	0.000 mg/l	04/12/89	ROGERS CARTAGE
Chromium, Total	0.000 mg/l	03/15/89	ROGERS CARTAGE
Chromium, Total	0.190 mg/l	04/12/89	TRADE WASTE
Chromium, Total	0.240 mg/l	03/15/89	TRADE WASTE
Chromium, Trivalent	0.000 mg/l	04/12/89	BIG RIVER ZINC
Chromium, Trivalent	0.000 mg/l	03/15/89	BIG RIVER ZINC
Chromium, Trivalent	0.740 mg/l	04/12/89	CERRO-EAST
Chromium, Trivalent	0.000 mg/l	03/15/89	CERRO-EAST
Chromium, Trivalent	0.074 mg/l	04/12/89	CERRO-WEST
Chromium, Trivalent	0.000 mg/l	03/15/89	CERRO-WEST
Chromium, Trivalent	0.000 mg/l	04/12/89	CLAYTON
Chromium, Trivalent	0.000 mg/l	03/15/89	CLAYTON
Chromium, Trivalent	0.560 mg/l	04/12/89	ETHYL
Chromium, Trivalent	0.860 mg/l	03/15/89	ETHYL
Chromium, Trivalent	0.000 mg/l	04/12/89	MIDWEST RUBBER
Chromium, Trivalent	0.000 mg/l	03/15/89	MIDWEST RUBBER
Chromium, Trivalent	0.079 mg/l	04/12/89	MONSANTO
Chromium, Trivalent	0.079 mg/l	04/12/89	MONSANTO
Chromium, Trivalent	0.000 mg/l	03/15/89	MONSANTO
Chromium, Trivalent	0.390 mg/l	02/15/89	MONSANTO
Chromium, Trivalent	0.203 mg/l	01/18/89	MONSANTO
Chromium, Trivalent	0.149 mg/l	12/14/88	MONSANTO
Chromium, Trivalent	0.063 mg/l	11/09/88	MONSANTO
Chromium, Trivalent	0.165 mg/l	10/12/88	MONSANTO
Chromium, Trivalent	0.101 mg/l	09/14/88	MONSANTO
Chromium, Trivalent	0.310 mg/l	08/10/88	MONSANTO
Chromium, Trivalent	0.058 mg/l	07/13/88	MONSANTO

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APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Chromium, Trivalent	0.000 mg/l	04/12/89	ROGERS CARTAGE
Chromium, Trivalent	0.000 mg/l	03/15/89	ROGERS CARTAGE
Chromium, Trivalent	0.000 mg/l	04/12/89	TRADE WASTE
Chromium, Trivalent	0.000 mg/l	03/15/89	TRADE WASTE
Chrysene	1. ug/l	03/15/89	CLAYTON
Cineole	500. ug/l	03/15/89	MIDWEST RUBBER
Coliforms, fecal	0.000 #/100 ml	04/12/89	BIG RIVER ZINC
Coliforms, fecal	6300.000 #/100 ml	03/15/89	BIG RIVER ZINC
Coliforms, fecal	21500.000 #/100 ml	12/08/88	BIG RIVER ZINC
Coliforms, fecal	153.000 #/100 ml	12/15/88	BIG RIVER ZINC
Coliforms, fecal	500.000 #/100 ml	12/22/88	BIG RIVER ZINC
Coliforms, fecal	2500.000 #/100 ml	12/28/88	BIG RIVER ZINC
Coliforms, fecal	1.000 #/100 ml	10/06/88	BIG RIVER ZINC
Coliforms, fecal	1545.000 #/100 ml	10/10/88	BIG RIVER ZINC
Coliforms, fecal	300.000 #/100 ml	10/20/88	BIG RIVER ZINC
Coliforms, fecal	1.000 #/100 ml	10/27/88	BIG RIVER ZINC
Coliforms, fecal	727.000 #/100 ml	08/04/88	BIG RIVER ZINC
Coliforms, fecal	9.000 #/100 ml	08/12/88	BIG RIVER ZINC
Coliforms, fecal	1.000 #/100 ml	08/19/88	BIG RIVER ZINC
Coliforms, fecal	2080.000 #/100 ml	08/26/88	BIG RIVER ZINC
Coliforms, fecal	0.000 #/100 ml	04/12/89	CERRO-EAST
Coliforms, fecal	0.000 #/100 ml	03/15/89	CERRO-EAST
Coliforms, fecal	2.000 #/100 ml	12/14/88	CERRO-EAST
Coliforms, fecal	2.000 #/100 ml	12/22/88	CERRO-EAST
Coliforms, fecal	2.000 #/100 ml	12/29/88	CERRO-EAST
Coliforms, fecal	2.000 #/100 ml	08/12/88	CERRO-EAST
Coliforms, fecal	2.000 #/100 ml	08/19/88	CERRO-EAST
Coliforms, fecal	2.000 #/100 ml	10/07/88	CERRO-EAST
Coliforms, fecal	2.000 #/100 ml	10/14/88	CERRO-EAST
Coliforms, fecal	2.000 #/100 ml	10/21/88	CERRO-EAST
Coliforms, fecal	10.000 #/100 ml	10/26/88	CERRO-EAST
Coliforms, fecal	0.000 #/100 ml	04/12/89	CERRO-WEST
Coliforms, fecal	0.000 #/100 ml	03/15/89	CERRO-WEST
Coliforms, fecal	2.000 #/100 ml	08/12/88	CERRO-WEST
Coliforms, fecal	2.000 #/100 ml	08/19/88	CERRO-WEST
Coliforms, fecal	2.000 #/100 ml	10/07/88	CERRO-WEST
Coliforms, fecal	2.000 #/100 ml	10/14/88	CERRO-WEST
Coliforms, fecal	2.000 #/100 ml	10/21/88	CERRO-WEST
Coliforms, fecal	10.000 #/100 ml	10/26/88	CERRO-WEST
Coliforms, fecal	2.000 #/100 ml	12/14/88	CERRO-WEST
Coliforms, fecal	5.000 #/100 ml	12/22/88	CERRO-WEST
Coliforms, fecal	8.200 #/100 ml	12/29/88	CERRO-WEST
Coliforms, fecal	0.000 #/100 ml	04/12/89	CLAYTON
Coliforms, fecal	10000.000 #/100 ml	03/15/89	CLAYTON
Coliforms, fecal	0.000 #/100 ml	04/12/89	ETHYL
Coliforms, fecal	0.000 #/100 ml	03/15/89	ETHYL
Coliforms, fecal	1.000 #/100 ml	07/07/88	ETHYL
Coliforms, fecal	820.000 #/100 ml	07/13/88	ETHYL
Coliforms, fecal	10.000 #/100 ml	07/21/88	ETHYL
Coliforms, fecal	1.000 #/100 ml	07/28/88	ETHYL
Coliforms, fecal	1.000 #/100 ml	10/06/88	ETHYL
Coliforms, fecal	1390.000 #/100 ml	10/13/88	ETHYL
Coliforms, fecal	1400.000 #/100 ml	10/20/88	ETHYL
Coliforms, fecal	2.000 #/100 ml	10/27/88	ETHYL

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APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Coliforms, fecal	3.000 #/100 ml	12/09/88	ETHYL
Coliforms, fecal	3900.000 #/100 ml	12/15/88	ETHYL
Coliforms, fecal	1.000 #/100 ml	12/22/88	ETHYL
Coliforms, fecal	1.000 #/100 ml	12/29/88	ETHYL
Coliforms, fecal	40000.000 #/100 ml	01/26/89	LANCHEM
Coliforms, fecal	600.000 #/100 ml	11/01/88	LANCHEM
Coliforms, fecal	0.000 #/100 ml	04/12/89	MIDWEST RUBBER
Coliforms, fecal	0.000 #/100 ml	03/15/89	MIDWEST RUBBER
Coliforms, fecal	330.000 #/100 ml	08/08/88	MIDWEST RUBBER
Coliforms, fecal	0.000 #/100 ml	08/17/88	MIDWEST RUBBER
Coliforms, fecal	790.000 #/100 ml	08/24/88	MIDWEST RUBBER
Coliforms, fecal	172.000 #/100 ml	08/31/88	MIDWEST RUBBER
Coliforms, fecal	10.000 #/100 ml	10/04/88	MIDWEST RUBBER
Coliforms, fecal	64.000 #/100 ml	10/12/88	MIDWEST RUBBER
Coliforms, fecal	2.000 #/100 ml	10/18/88	MIDWEST RUBBER
Coliforms, fecal	110.000 #/100 ml	10/26/88	MIDWEST RUBBER
Coliforms, fecal	0.000 #/100 ml	04/12/89	MONSANTO
Coliforms, fecal	0.000 #/100 ml	04/12/89	MONSANTO
Coliforms, fecal	0.000 #/100 ml	03/15/89	MONSANTO
Coliforms, fecal	0.000 #/100 ml	02/15/89	MONSANTO
Coliforms, fecal	0.000 #/100 ml	01/18/89	MONSANTO
Coliforms, fecal	1.000 #/100 ml	12/07/88	MONSANTO
Coliforms, fecal	1.000 #/100 ml	12/14/88	MONSANTO
Coliforms, fecal	1.000 #/100 ml	12/19/88	MONSANTO
Coliforms, fecal	1.000 #/100 ml	12/27/88	MONSANTO
Coliforms, fecal	0.000 #/100 ml	12/14/88	MONSANTO
Coliforms, fecal	100.000 #/100 ml	11/09/88	MONSANTO
Coliforms, fecal	1.000 #/100 ml	10/06/88	MONSANTO
Coliforms, fecal	1.000 #/100 ml	10/13/88	MONSANTO
Coliforms, fecal	10.000 #/100 ml	10/18/88	MONSANTO
Coliforms, fecal	1.000 #/100 ml	10/26/88	MONSANTO
Coliforms, fecal	0.000 #/100 ml	10/12/88	MONSANTO
Coliforms, fecal	0.000 #/100 ml	09/14/88	MONSANTO
Coliforms, fecal	2.000 #/100 ml	08/15/88	MONSANTO
Coliforms, fecal	2.000 #/100 ml	08/23/88	MONSANTO
Coliforms, fecal	2.000 #/100 ml	08/29/88	MONSANTO
Coliforms, fecal	4000.000 #/100 ml	09/06/88	MONSANTO
Coliforms, fecal	0.000 #/100 ml	08/10/88	MONSANTO
Coliforms, fecal	0.000 #/100 ml	07/13/88	MONSANTO
Coliforms, fecal	0.000 #/100 ml	01/04/89	MUSICK
Coliforms, fecal	0.000 #/100 ml	11/21/88	MUSICK
Coliforms, fecal	4.000 #/100 ml	10/03/88	PFIZER-SE
Coliforms, fecal	1.000 #/100 ml	07/12/88	PFIZER-SE
Coliforms, fecal	1.000 #/100 ml	07/12/88	PFIZER-SW
Coliforms, fecal	26.000 #/100 ml	07/21/88	PFIZER-SW
Coliforms, fecal	0.000 #/100 ml	04/12/89	ROGERS CARTAGE
Coliforms, fecal	0.000 #/100 ml	03/15/89	ROGERS CARTAGE
Coliforms, fecal	0.000 #/100 ml	04/12/89	TRADE WASTE
Coliforms, fecal	0.000 #/100 ml	03/15/89	TRADE WASTE
Copper	0.063 mg/l	04/12/89	BIG RIVER ZINC
Copper	0.038 mg/l	03/15/89	BIG RIVER ZINC
Copper	0.000 mg/l	02/21/89	BIG RIVER ZINC
Copper	0.073 mg/l	12/08/88	BIG RIVER ZINC
Copper	0.137 mg/l	12/15/88	BIG RIVER ZINC

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Copper	0.139 mg/l	12/22/88	BIG RIVER ZINC
Copper	0.217 mg/l	12/28/88	BIG RIVER ZINC
Copper	0.144 mg/l	10/06/88	BIG RIVER ZINC
Copper	0.244 mg/l	10/10/88	BIG RIVER ZINC
Copper	0.097 mg/l	10/20/88	BIG RIVER ZINC
Copper	0.132 mg/l	10/27/88	BIG RIVER ZINC
Copper	0.138 mg/l	08/04/88	BIG RIVER ZINC
Copper	0.182 mg/l	08/12/88	BIG RIVER ZINC
Copper	0.052 mg/l	08/19/88	BIG RIVER ZINC
Copper	0.223 mg/l	08/26/88	BIG RIVER ZINC
Copper	2.130 mg/l	04/27/89	CERRO-EAST
Copper	4.980 mg/l	05/01/89	CERRO-EAST
Copper	44.670 mg/l	05/09/89	CERRO-EAST
Copper	0.840 mg/l	05/17/89	CERRO-EAST
Copper	11.940 mg/l	05/25/89	CERRO-EAST
Copper	802.000 mg/l	04/12/89	CERRO-EAST
Copper	35.600 mg/l	03/15/89	CERRO-EAST
Copper	95.700 mg/l	02/22/89	CERRO-EAST
Copper	104.000 mg/l	12/07/88	CERRO-EAST
Copper	42.000 mg/l	12/14/88	CERRO-EAST
Copper	24.600 mg/l	12/22/88	CERRO-EAST
Copper	39.000 mg/l	12/29/88	CERRO-EAST
Copper	18.900 mg/l	08/05/88	CERRO-EAST
Copper	52.000 mg/l	08/12/88	CERRO-EAST
Copper	11.100 mg/l	08/19/88	CERRO-EAST
Copper	50.000 mg/l	08/24/88	CERRO-EAST
Copper	129.000 mg/l	10/07/88	CERRO-EAST
Copper	27.300 mg/l	10/14/88	CERRO-EAST
Copper	34.000 mg/l	10/21/88	CERRO-EAST
Copper	130.000 mg/l	10/26/88	CERRO-EAST
Copper	2.330 mg/l	06/02/89	CERRO-EAST
Copper	54.666 mg/l	06/05/89	CERRO-EAST
Copper	355.100 mg/l	06/13/89	CERRO-EAST
Copper	2.600 mg/l	04/27/89	CERRO-WEST
Copper	2.450 mg/l	05/01/89	CERRO-WEST
Copper	3.370 mg/l	05/09/89	CERRO-WEST
Copper	1.840 mg/l	05/17/89	CERRO-WEST
Copper	2.730 mg/l	05/25/89	CERRO-WEST
Copper	0.960 mg/l	04/12/89	CERRO-WEST
Copper	1.600 mg/l	03/15/89	CERRO-WEST
Copper	4.500 mg/l	02/22/89	CERRO-WEST
Copper	168.000 mg/l	08/12/88	CERRO-WEST
Copper	34.000 mg/l	08/19/88	CERRO-WEST
Copper	17.000 mg/l	08/24/88	CERRO-WEST
Copper	4.580 mg/l	10/07/88	CERRO-WEST
Copper	3.000 mg/l	10/14/88	CERRO-WEST
Copper	215.000 mg/l	10/21/88	CERRO-WEST
Copper	24.000 mg/l	10/26/88	CERRO-WEST
Copper	1.660 mg/l	12/07/88	CERRO-WEST
Copper	3.410 mg/l	12/14/88	CERRO-WEST
Copper	26.000 mg/l	12/22/88	CERRO-WEST
Copper	12.500 mg/l	12/29/88	CERRO-WEST
Copper	4.710 mg/l	06/02/89	CERRO-WEST
Copper	1.450 mg/l	06/05/89	CERRO-WEST
Copper	2.760 mg/l	06/13/89	CERRO-WEST
Copper	0.470 mg/l	04/12/89	CLAYTON
Copper	0.053 mg/l	03/15/89	CLAYTON
Copper	0.180 mg/l	04/12/89	ETHYL
Copper	0.036 mg/l	03/15/89	ETHYL

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APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Copper	0.019 mg/l	07/07/88	ETHYL
Copper	0.029 mg/l	07/13/88	ETHYL
Copper	0.076 mg/l	07/21/88	ETHYL
Copper	0.073 mg/l	07/28/88	ETHYL
Copper	0.040 mg/l	10/06/88	ETHYL
Copper	0.053 mg/l	10/13/88	ETHYL
Copper	0.153 mg/l	10/20/88	ETHYL
Copper	0.018 mg/l	10/27/88	ETHYL
Copper	0.038 mg/l	12/09/88	ETHYL
Copper	0.025 mg/l	12/15/88	ETHYL
Copper	0.066 mg/l	12/22/88	ETHYL
Copper	0.020 mg/l	12/29/88	ETHYL
Copper	0.037 mg/l	04/18/89	LANCHEM
Copper	0.028 mg/l	03/21/89	LANCHEM
Copper	0.020 mg/l	01/26/89	LANCHEM
Copper	0.160 mg/l	11/01/88	LANCHEM
Copper	0.130 mg/l	04/12/89	MIDWEST RUBBER
Copper	0.068 mg/l	03/15/89	MIDWEST RUBBER
Copper	0.292 mg/l	08/08/88	MIDWEST RUBBER
Copper	0.012 mg/l	08/17/88	MIDWEST RUBBER
Copper	0.106 mg/l	08/24/88	MIDWEST RUBBER
Copper	0.024 mg/l	08/31/88	MIDWEST RUBBER
Copper	0.331 mg/l	10/04/88	MIDWEST RUBBER
Copper	0.079 mg/l	10/12/88	MIDWEST RUBBER
Copper	0.023 mg/l	10/18/88	MIDWEST RUBBER
Copper	0.031 mg/l	10/26/88	MIDWEST RUBBER
Copper	0.099 mg/l	02/21/89	MIDWEST RUBBER
Copper	0.0[illegible]0 mg/l	04/12/89	MONSANTO
Copper	0.0[illegible]0 mg/l	03/15/89	MONSANTO
Copper	0.042 mg/l	02/15/89	MONSANTO
Copper	0.044 mg/l	01/18/89	MONSANTO
Copper	0.030 mg/l	12/14/88	MONSANTO
Copper	0.037 mg/l	11/09/88	MONSANTO
Copper	0.052 mg/l	10/06/88	MONSANTO
Copper	0.116 mg/l	10/13/88	MONSANTO
Copper	0.052 mg/l	10/18/88	MONSANTO
Copper	0.032 mg/l	10/26/88	MONSANTO
Copper	0.045 mg/l	10/12/88	MONSANTO
Copper	0.028 mg/l	09/14/88	MONSANTO
Copper	0.015 mg/l	08/15/88	MONSANTO
Copper	0.023 mg/l	08/23/88	MONSANTO
Copper	0.021 mg/l	08/29/88	MONSANTO
Copper	0.014 mg/l	09/06/88	MONSANTO
Copper	0.033 mg/l	08/10/88	MONSANTO
Copper	0.032 mg/l	07/13/88	MONSANTO
Copper	1.700 mg/l	04/18/89	MUSICK
Copper	2.100 mg/l	03/21/89	MUSICK
Copper	1.270 mg/l	05/17/89	MUSICK
Copper	5.800 mg/l	11/07/88	MUSICK
Copper	0.0[illegible]0 mg/l	12/05/88	MUSICK
Copper	0.110 mg/l	01/09/89	MUSICK
Copper	0.130 mg/l	02/13/89	MUSICK
Copper	13.3[illegible]0 mg/l	06/13/89	MUSICK
Copper	0.035 mg/l	04/19/89	PFIZER-SE
Copper	0.059 mg/l	03/21/89	PFIZER-SE
Copper	36.000 mg/l	02/27/89	PFIZER-SE
Copper	0.023 mg/l	12/09/88	PFIZER-SE
Copper	0.790 mg/l	12/15/88	PFIZER-SE

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Copper	0.042 mg/l	12/20/88	PFIZER-SE
Copper	0.032 mg/l	12/28/88	PFIZER-SE
Copper	0.036 mg/l	10/03/88	PFIZER-SE
Copper	0.033 mg/l	10/12/88	PFIZER-SE
Copper	0.036 mg/l	10/19/88	PFIZER-SE
Copper	0.051 mg/l	10/27/88	PFIZER-SE
Copper	0.089 mg/l	07/05/88	PFIZER-SE
Copper	0.051 mg/l	07/12/88	PFIZER-SE
Copper	0.042 mg/l	07/21/88	PFIZER-SE
Copper	0.015 mg/l	07/27/88	PFIZER-SE
Copper	0.000 mg/l	04/19/89	PFIZER-SW
Copper	0.000 mg/l	03/21/89	PFIZER-SW
Copper	0.000 mg/l	02/27/89	PFIZER-SW
Copper	0.041 mg/l	12/09/88	PFIZER-SW
Copper	0.023 mg/l	12/15/88	PFIZER-SW
Copper	0.025 mg/l	12/20/88	PFIZER-SW
Copper	0.023 mg/l	12/28/88	PFIZER-SW
Copper	0.013 mg/l	10/03/88	PFIZER-SW
Copper	0.038 mg/l	10/12/88	PFIZER-SW
Copper	0.021 mg/l	10/19/88	PFIZER-SW
Copper	0.019 mg/l	10/27/88	PFIZER-SW
Copper	0.019 mg/l	07/05/88	PFIZER-SW
Copper	0.020 mg/l	07/12/88	PFIZER-SW
Copper	0.016 mg/l	07/21/88	PFIZER-SW
Copper	0.020 mg/l	07/27/88	PFIZER-SW
Copper	0.160 mg/l	04/12/89	ROGERS CARTAGE
Copper	0.069 mg/l	03/15/89	ROGERS CARTAGE
Copper	0.130 mg/l	04/12/89	TRADE WASTE
Copper	0.060 mg/l	03/15/89	TRADE WASTE
Copper (avg)(1)	0.200 mg/l	04/88	PFIZER-SE
Copper (avg)(1)	0.330 mg/l	03/88	PFIZER-SE
Copper (avg)(1)	0.150 mg/l	02/88	PFIZER-SE
Copper (avg)(1)	0.210 mg/l	04/88	PFIZER-SW
Copper (avg)(1)	0.060 mg/l	03/88	PFIZER-SW
Copper (avg)(1)	0.060 mg/l	02/88	PFIZER-SW
Cyanides	0.010 mg/l	01/26/89	LANCHEM
Cyanides	0.020 mg/l	11/01/88	LANCHEM
Cyanides	0.016 mg/l	12/07/88	MONSANTO
Cyanides	0.004 mg/l	12/14/88	MONSANTO
Cyanides	0.001 mg/l	12/19/88	MONSANTO
Cyanides	0.008 mg/l	12/27/88	MONSANTO
Cyanides	0.005 mg/l	10/06/88	MONSANTO
Cyanides	0.008 mg/l	10/13/88	MONSANTO
Cyanides	0.021 mg/l	10/18/88	MONSANTO
Cyanides	0.011 mg/l	10/26/88	MONSANTO
Cyanides	0.076 mg/l	08/15/88	MONSANTO
Cyanides	0.025 mg/l	08/23/88	MONSANTO
Cyanides	0.026 mg/l	08/29/88	MONSANTO
Cyanides	0.039 mg/l	09/06/88	MONSANTO
Cyanides	0.007 mg/l	11/07/88	MUSICK
Cyanides	0.423 mg/l	12/05/88	MUSICK
Cyanides	0.007 mg/l	01/09/89	MUSICK
Cyanides	0.007 mg/l	02/13/89	MUSICK
Cyanides, total	0.000 mg/l	04/12/89	BIG RIVER ZINC

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APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Cyanides, total	0.000 mg/l	03/15/89	BIG RIVER ZINC
Cyanides, total	0.000 mg/l	02/21/89	BIG RIVER ZINC
Cyanides, total	0.000 mg/l	04/12/89	CERRO-EAST
Cyanides, total	0.000 mg/l	03/15/89	CERRO-EAST
Cyanides, total	0.030 mg/l	02/22/89	CERRO-EAST
Cyanides, total	0.000 mg/l	04/12/89	CERRO-WEST
Cyanides, total	0.023 mg/l	03/15/89	CERRO-WEST
Cyanides, total	0.000 mg/l	02/22/89	CERRO-WEST
Cyanides, total	0.033 mg/l	04/12/89	CLAYTON
Cyanides, total	0.000 mg/l	03/15/89	CLAYTON
Cyanides, total	0.000 mg/l	04/12/89	ETHYL
Cyanides, total	0.000 mg/l	03/15/89	ETHYL
Cyanides, total	0.000 mg/l	04/18/89	LANCHEM
Cyanides, total	0.000 mg/l	03/21/89	LANCHEM
Cyanides, total	0.000 mg/l	04/12/89	MIDWEST RUBBER
Cyanides, total	0.000 mg/l	03/15/89	MIDWEST RUBBER
Cyanides, total	0.000 mg/l	02/21/89	MIDWEST RUBBER
Cyanides, total	0.000 mg/l	04/12/89	MONSANTO
Cyanides, total	0.000 mg/l	04/12/89	MONSANTO
Cyanides, total	0.010 mg/l	03/15/89	MONSANTO
Cyanides, total	0.000 mg/l	02/15/89	MONSANTO
Cyanides, total	0.000 mg/l	01/18/89	MONSANTO
Cyanides, total	0.000 mg/l	12/14/88	MONSANTO
Cyanides, total	0.000 mg/l	11/09/88	MONSANTO
Cyanides, total	0.000 mg/l	10/12/88	MONSANTO
Cyanides, total	0.000 mg/l	09/14/88	MONSANTO
Cyanides, total	0.000 mg/l	08/10/88	MONSANTO
Cyanides, total	0.000 mg/l	07/13/88	MONSANTO
Cyanides, total	0.000 mg/l	04/18/89	MUSICK
Cyanides, total	0.000 mg/l	03/21/89	MUSICK
Cyanides, total	0.000 mg/l	05/17/89	MUSICK
Cyanides, total	0.000 mg/l	04/19/89	PFIZER-SE
Cyanides, total	0.000 mg/l	03/21/89	PFIZER-SE
Cyanides, total	0.000 mg/l	02/27/89	PFIZER-SE
Cyanides, total	0.011 mg/l	04/19/89	PFIZER-SW
Cyanides, total	0.000 mg/l	03/21/89	PFIZER-SW
Cyanides, total	0.0[illegible]7 mg/l	02/27/89	PFIZER-SW
Cyanides, total	0.033 mg/l	04/12/89	ROGERS CARTAGE
Cyanides, total	0.0[illegible]7 mg/l	03/15/89	ROGERS CARTAGE
Cyanides, total	0.076 mg/l	04/12/89	TRADE WASTE
Cyanides, total	0.058 mg/l	03/15/89	TRADE WASTE
Decanoic Acid	10. ug/l	03/15/89	TRADE WASTE
Di-n-butlylphthalate	2. ug/l	03/15/89	BIG RIVER ZINC
Di-n-butlylphthalate	1. ug/l	03/15/89	CERRO-WEST
Di-n-butlylphthalate	2. ug/l	03/15/89	CLAYTON
Di-n-butlylphthalate	1. ug/l	03/21/89	MUSICK

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APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION		SAMPLING DATE	INDUSTRY
Di-n-butlylphthalate	18.	ug/l	03/21/89	PFIZER-SE
Di-n-butlylphthalate	11.	ug/l	03/15/89	ROGERS CARTAGE
Di-n-butlylphthalate	1.	ug/l	04/12/89	TRADE WASTE
Dibenzofuran	2.	ug/l	03/15/89	CLAYTON
Dibenzofuran	10.	ug/l	03/15/89	ROGERS CARTAGE
Dichlorobenzene	4000.	ug/l	03/15/89	MONSANTO
Dichlorobenzene	17000.	ug/l	12/14/88	MONSANTO
Dichlorobenzene	8500.	ug/l	12/14/88	MONSANTO
Dichlorobenzene	3200.	ug/l	08/10/88	MONSANTO
Dichlorobenzene	14000.	ug/l	07/13/88	MONSANTO
Dimethyl Disulfide	70.	ug/l	04/12/89	MIDWEST RUBBER
Ethylbenzene	3.	ug/l	04/12/89	CERRO-EAST
Ethylbenzene	220.	ug/l	04/12/89	CERRO-WEST
Ethylbenzene	140.	ug/l	04/12/89	CLAYTON
Ethylbenzene	3500.	ug/l	03/15/89	CLAYTON
Ethylbenzene	390.	ug/l	03/15/89	ETHYL
Ethylbenzene	470.	ug/l	03/21/89	LANCHEM
Ethylbenzene	11.	ug/l	11/01/88	LANCHEM
Ethylbenzene	1400.	ug/l	04/12/89	MIDWEST RUBBER
Ethylbenzene	580.	ug/l	04/12/89	MONSANTO
Ethylbenzene	63.	ug/l	03/15/89	MONSANTO
Ethylbenzene	500.	ug/l	02/15/89	MONSANTO
Ethylbenzene	240.	ug/l	01/18/89	MONSANTO
Ethylbenzene	720.	ug/l	12/14/88	MONSANTO
Ethylbenzene	810.	ug/l	12/14/88	MONSANTO
Ethylbenzene	300.	ug/l	11/09/88	MONSANTO
Ethylbenzene	200.	ug/l	08/10/88	MONSANTO
Ethylbenzene	1200.	ug/l	07/13/88	MONSANTO
Ethylbenzene	2.	ug/l	04/12/89	TRADE WASTE
Fluoranthene	3.	ug/l	03/15/89	CLAYTON
Fluoranthene	17.	ug/l	03/15/89	ROGERS CARTAGE
Fluorene	17.	ug/l	03/15/89	ROGERS CARTAGE
Fluoride	6.400	mg/l	04/12/89	BIG RIVER ZINC
Fluoride	5.700	mg/l	03/15/89	BIG RIVER ZINC
Fluoride	1.600	mg/l	04/12/89	CERRO-EAST
Fluoride	14.800	mg/l	03/15/89	CERRO-EAST
Fluoride	0.850	mg/l	04/12/89	CERRO-WEST
Fluoride	1.300	mg/l	03/15/89	CERRO-WEST
Fluoride	0.730	mg/l	04/12/89	CLAYTON
Fluoride	0.400	mg/l	03/15/89	CLAYTON

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Fluoride	0.890 mg/l	04/12/89	ETHYL
Fluoride	0.580 mg/l	03/15/89	ETHYL
Fluoride	0.820 mg/l	04/12/89	MIDWEST RUBBER
Fluoride	0.530 mg/l	03/15/89	MIDWEST RUBBER
Fluoride	0.700 mg/l	04/12/89	MONSANTO
Fluoride	0.700 mg/l	04/12/89	MONSANTO
Fluoride	0.900 mg/l	03/15/89	MONSANTO
Fluoride	1.600 mg/l	02/15/89	MONSANTO
Fluoride	0.900 mg/l	01/18/89	MONSANTO
Fluoride	1.100 mg/l	12/14/88	MONSANTO
Fluoride	1.300 mg/l	11/09/88	MONSANTO
Fluoride	1.100 mg/l	10/12/88	MONSANTO
Fluoride	1.000 mg/l	09/14/88	MONSANTO
Fluoride	0.840 mg/l	08/10/88	MONSANTO
Fluoride	1.100 mg/l	07/13/88	MONSANTO
Fluoride	1.300 mg/l	04/12/89	ROGERS CARTAGE
Fluoride	1.100 mg/l	03/15/89	ROGERS CARTAGE
Fluoride	8.100 mg/l	04/12/89	TRADE WASTE
Fluoride	21.600 mg/l	03/15/89	TRADE WASTE
Hexanedioic Acid Ester	5. ug/l	03/21/89	MUSICK
Hexanedioic Acid Ester	7. ug/l	03/21/89	PFIZER-SE
Hexanedioic Acid Ester	6. ug/l	03/21/89	PFIZER-SW
Iron	0.950 mg/l	04/12/89	BIG RIVER ZINC
Iron	0.480 mg/l	03/15/89	BIG RIVER ZINC
Iron	0.430 mg/l	02/21/89	BIG RIVER ZINC
Iron	275.000 mg/l	04/12/89	CERRO-EAST
Iron	53.800 mg/l	03/15/89	CERRO-EAST
Iron	211.000 mg/l	02/22/89	CERRO-EAST
Iron	0.130 mg/l	04/12/89	CERRO-WEST
Iron	0.290 mg/l	03/15/89	CERRO-WEST
Iron	0.680 mg/l	02/22/89	CERRO-WEST
Iron	1.000 mg/l	04/12/89	CLAYTON
Iron	2.000 mg/l	03/15/89	CLAYTON
Iron	1.200 mg/l	04/12/89	ETHYL
Iron	0.790 mg/l	03/15/89	ETHYL
Iron	2.200 mg/l	04/18/89	LANCHEM
Iron	0.670 mg/l	03/21/89	LANCHEM
Iron	0.730 mg/l	04/12/89	MIDWEST RUBBER
Iron	2.100 mg/l	03/15/89	MIDWEST RUBBER
Iron	3.460 mg/l	02/21/89	MIDWEST RUBBER
Iron	0.850 mg/l	04/12/89	MONSANTO
Iron	1.300 mg/l	03/15/89	MONSANTO
Iron	1.020 mg/l	02/15/89	MONSANTO
Iron	1.960 mg/l	01/18/89	MONSANTO
Iron	0.675 mg/l	12/14/88	MONSANTO
Iron	0.601 mg/l	11/09/88	MONSANTO
Iron	0.206 mg/l	10/12/88	MONSANTO
Iron	2.920 mg/l	09/14/88	MONSANTO

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Iron	3.160 mg/l	08/10/88	MONSANTO
Iron	0.975 mg/l	07/13/88	MONSANTO
Iron	5.000 mg/l	04/18/89	MUSICK
Iron	1.900 mg/l	03/21/89	MUSICK
Iron	6.100 mg/l	04/19/89	PFIZER-SE
Iron	66.300 mg/l	03/21/89	PFIZER-SE
Iron	8520.000 mg/l	02/27/89	PFIZER-SE
Iron	4.200 mg/l	04/19/89	PFIZER-SW
Iron	9.600 mg/l	03/21/89	PFIZER-SW
Iron	24.900 mg/l	02/27/89	PFIZER-SW
Iron	1.100 mg/l	04/12/89	ROGERS CARTAGE
Iron	1.100 mg/l	03/15/89	ROGERS CARTAGE
Iron	6.800 mg/l	04/12/89	TRADE WASTE
Iron	6.800 mg/l	03/15/89	TRADE WASTE
Iron (avg)(1)	39.000 mg/l	05/89	PFIZER-SE
Iron (avg)(1)	62.000 mg/l	04/89	PFIZER-SE
Iron (avg)(1)	44.000 mg/l	03/89	PFIZER-SE
Iron (avg)(1)	157.000 mg/l	02/89	PFIZER-SE
Iron (avg)(1)	61.000 mg/l	01/89	PFIZER-SE
Iron (avg)(1)	36.000 mg/l	12/88	PFIZER-SE
Iron (avg)(1)	55.000 mg/l	11/88	PFIZER-SE
Iron (avg)(1)	49.000 mg/l	10/88	PFIZER-SE
Iron (avg)(1)	46.000 mg/l	09/88	PFIZER-SE
Iron (avg)(1)	61.000 mg/l	08/88	PFIZER-SE
Iron (avg)(1)	76.000 mg/l	07/88	PFIZER-SE
Iron (avg)(1)	55.000 mg/l	06/88	PFIZER-SE
Iron (avg)(1)	139.000 mg/l	05/88	PFIZER-SE
Iron (avg)(1)	617.000 mg/l	04/88	PFIZER-SE
Iron (avg)(1)	473.000 mg/l	03/88	PFIZER-SE
Iron (avg)(1)	506.000 mg/l	02/88	PFIZER-SE
Iron (avg)(1)	11.000 mg/l	05/89	PFIZER-SW
Iron (avg)(1)	14.000 mg/l	04/89	PFIZER-SW
Iron (avg)(1)	28.000 mg/l	03/89	PFIZER-SW
Iron (avg)(1)	24.000 mg/l	02/89	PFIZER-SW
Iron (avg)(1)	29.000 mg/l	01/89	PFIZER-SW
Iron (avg)(1)	16.000 mg/l	12/88	PFIZER-SW
Iron (avg)(1)	17.000 mg/l	11/88	PFIZER-SW
Iron (avg)(1)	27.000 mg/l	10/88	PFIZER-SW
Iron (avg)(1)	44.000 mg/l	09/88	PFIZER-SW
Iron (avg)(1)	22.000 mg/l	08/88	PFIZER-SW
Iron (avg)(1)	46.000 mg/l	07/88	PFIZER-SW
Iron (avg)(1)	18.000 mg/l	06/88	PFIZER-SW
Iron (avg)(1)	22.000 mg/l	05/88	PFIZER-SW
Iron (avg)(1)	24.000 mg/l	04/88	PFIZER-SW
Iron (avg)(1)	63.000 mg/l	03/88	PFIZER-SW
Iron (avg)(1)	92.000 mg/l	02/88	PFIZER-SW
Isophorone	5. ug/l	03/15/89	CLAYTON
Lead	0.062 mg/l	04/12/89	BIG RIVER ZINC
Lead	0.043 mg/l	03/15/89	BIG RIVER ZINC
Lead	0.000 mg/l	02/21/89	BIG RIVER ZINC
Lead	0.005 mg/l	12/08/88	BIG RIVER ZINC
Lead	0.014 mg/l	12/15/88	BIG RIVER ZINC
Lead	0.066 mg/l	12/22/88	BIG RIVER ZINC
Lead	0.033 mg/l	12/28/88	BIG RIVER ZINC

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APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Lead	0.050 mg/l	10/06/88	BIG RIVER ZINC
Lead	0.069 mg/l	10/10/88	BIG RIVER ZINC
Lead	0.021 mg/l	10/20/88	BIG RIVER ZINC
Lead	0.032 mg/l	10/27/88	BIG RIVER ZINC
Lead	0.017 mg/l	08/04/88	BIG RIVER ZINC
Lead	0.017 mg/l	08/12/88	BIG RIVER ZINC
Lead	0.005 mg/l	08/19/88	BIG RIVER ZINC
Lead	0.024 mg/l	08/26/88	BIG RIVER ZINC
Lead	0.890 mg/l	04/27/89	CERRO-EAST
Lead	0.960 mg/l	05/01/89	CERRO-EAST
Lead	3.830 mg/l	05/09/89	CERRO-EAST
Lead	0.040 mg/l	05/17/89	CERRO-EAST
Lead	1.640 mg/l	05/25/89	CERRO-EAST
Lead	180.000 mg/l	04/12/89	CERRO-EAST
Lead	14.900 mg/l	03/15/89	CERRO-EAST
Lead	12.600 mg/l	02/22/89	CERRO-EAST
Lead	22.100 mg/l	12/07/88	CERRO-EAST
Lead	3.390 mg/l	12/14/88	CERRO-EAST
Lead	5.820 mg/l	12/22/88	CERRO-EAST
Lead	2.340 mg/l	12/29/88	CERRO-EAST
Lead	9.200 mg/l	08/05/88	CERRO-EAST
Lead	7.290 mg/l	08/12/88	CERRO-EAST
Lead	7.220 mg/l	08/19/88	CERRO-EAST
Lead	19.000 mg/l	08/24/88	CERRO-EAST
Lead	16.400 mg/l	10/07/88	CERRO-EAST
Lead	11.000 mg/l	10/14/88	CERRO-EAST
Lead	6.940 mg/l	10/21/88	CERRO-EAST
Lead	10.000 mg/l	10/26/88	CERRO-EAST
Lead	0.100 mg/l	06/02/89	CERRO-EAST
Lead	2.770 mg/l	06/05/89	CERRO-EAST
Lead	2.400 mg/l	06/13/89	CERRO-EAST
Lead	0.170 mg/l	04/27/89	CERRO-WEST
Lead	0.100 mg/l	05/01/89	CERRO-WEST
Lead	0.250 mg/l	05/09/89	CERRO-WEST
Lead	0.140 mg/l	05/17/89	CERRO-WEST
Lead	0.180 mg/l	05/25/89	CERRO-WEST
Lead	0.250 mg/l	04/12/89	CERRO-WEST
Lead	0.140 mg/l	03/15/89	CERRO-WEST
Lead	0.290 mg/l	02/22/89	CERRO-WEST
Lead	14.200 mg/l	08/12/88	CERRO-WEST
Lead	1.850 mg/l	08/19/88	CERRO-WEST
Lead	2.200 mg/l	08/24/88	CERRO-WEST
Lead	1.300 mg/l	10/07/88	CERRO-WEST
Lead	0.230 mg/l	10/14/88	CERRO-WEST
Lead	19.960 mg/l	10/21/88	CERRO-WEST
Lead	1.500 mg/l	10/26/88	CERRO-WEST
Lead	0.160 mg/l	12/07/88	CERRO-WEST
Lead	0.100 mg/l	12/14/88	CERRO-WEST
Lead	1.680 mg/l	12/22/88	CERRO-WEST
Lead	0.850 mg/l	12/29/88	CERRO-WEST
Lead	0.190 mg/l	06/02/89	CERRO-WEST
Lead	0.070 mg/l	06/05/89	CERRO-WEST
Lead	0.100 mg/l	06/13/89	CERRO-WEST
Lead	0.180 mg/l	04/12/89	CLAYTON
Lead	0.091 mg/l	03/15/89	CLAYTON
Lead	0.092 mg/l	04/12/89	ETHYL
Lead	0.034 mg/l	03/15/89	ETHYL
Lead	0.007 mg/l	07/07/88	ETHYL
Lead	0.005 mg/l	07/13/88	ETHYL

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APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Lead	0.130 mg/l	07/21/88	ETHYL
Lead	0.790 mg/l	07/28/88	ETHYL
Lead	0.005 mg/l	10/06/88	ETHYL
Lead	0.005 mg/l	10/13/88	ETHYL
Lead	0.011 mg/l	10/20/88	ETHYL
Lead	0.005 mg/l	10/27/88	ETHYL
Lead	0.011 mg/l	12/09/88	ETHYL
Lead	0.005 mg/l	12/15/88	ETHYL
Lead	0.005 mg/l	12/22/88	ETHYL
Lead	0.006 mg/l	12/29/88	ETHYL
Lead	0.082 mg/l	04/18/89	LANCHEM
Lead	0.019 mg/l	03/21/89	LANCHEM
Lead	0.050 mg/l	01/26/89	LANCHEM
Lead	0.090 mg/l	11/01/88	LANCHEM
Lead	0.036 mg/l	04/12/89	MIDWEST RUBBER
Lead	0.014 mg/l	03/15/89	MIDWEST RUBBER
Lead	0.055 mg/l	08/08/88	MIDWEST RUBBER
Lead	0.010 mg/l	08/17/88	MIDWEST RUBBER
Lead	0.009 mg/l	08/24/88	MIDWEST RUBBER
Lead	0.000 mg/l	08/31/88	MIDWEST RUBBER
Lead	0.142 mg/l	10/04/88	MIDWEST RUBBER
Lead	0.044 mg/l	10/12/88	MIDWEST RUBBER
Lead	0.044 mg/l	10/18/88	MIDWEST RUBBER
Lead	0.008 mg/l	10/26/88	MIDWEST RUBBER
Lead	0.025 mg/l	02/21/89	MIDWEST RUBBER
Lead	0.007 mg/l	04/12/89	MONSANTO
Lead	0.000 mg/l	03/15/89	MONSANTO
Lead	0.000 mg/l	02/15/89	MONSANTO
Lead	0.000 mg/l	01/18/89	MONSANTO
Lead	0.007 mg/l	12/14/88	MONSANTO
Lead	0.016 mg/l	12/14/88	MONSANTO
Lead	0.006 mg/l	11/09/88	MONSANTO
Lead	0.009 mg/l	10/06/88	MONSANTO
Lead	0.007 mg/l	10/12/88	MONSANTO
Lead	0.010 mg/l	09/14/88	MONSANTO
Lead	0.000 mg/l	08/10/88	MONSANTO
Lead	0.005 mg/l	07/13/88	MONSANTO
Lead	0.720 mg/l	04/18/89	MUSICK
Lead	0.170 mg/l	03/21/89	MUSICK
Lead	0.760 mg/l	05/17/89	MUSICK
Lead	0.080 mg/l	11/07/88	MUSICK
Lead	0.050 mg/l	12/05/88	MUSICK
Lead	0.050 mg/l	01/09/89	MUSICK
Lead	0.050 mg/l	02/13/89	MUSICK
Lead	0.070 mg/l	06/13/89	MUSICK
Lead	0.000 mg/l	04/19/89	PFIZER-SE
Lead	0.000 mg/l	03/21/89	PFIZER-SE
Lead	0.000 mg/l	02/27/89	PFIZER-SE
Lead	0.013 mg/l	12/09/88	PFIZER-SE
Lead	0.011 mg/l	12/15/88	PFIZER-SE
Lead	0.011 mg/l	12/20/88	PFIZER-SE
Lead	0.014 mg/l	12/28/88	PFIZER-SE
Lead	0.012 mg/l	10/03/88	PFIZER-SE
Lead	0.008 mg/l	10/12/88	PFIZER-SE
Lead	0.013 mg/l	10/19/88	PFIZER-SE
Lead	0.007 mg/l	10/27/88	PFIZER-SE
Lead	0.079 mg/l	07/05/88	PFIZER-SE
Lead	0.033 mg/l	07/12/88	PFIZER-SE

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Lead	0.026 mg/l	07/21/88	PFIZER-SE
Lead	0.128 mg/l	07/27/88	PFIZER-SE
Lead	0.006 mg/l	04/19/89	PFIZER-SW
Lead	0.031 mg/l	03/21/89	PFIZER-SW
Lead	0.014 mg/l	02/27/89	PFIZER-SW
Lead	0.010 mg/l	12/09/88	PFIZER-SW
Lead	0.012 mg/l	12/15/88	PFIZER-SW
Lead	0.015 mg/l	12/20/88	PFIZER-SW
Lead	0.018 mg/l	12/28/88	PFIZER-SW
Lead	0.015 mg/l	10/03/88	PFIZER-SW
Lead	0.035 mg/l	10/12/88	PFIZER-SW
Lead	0.011 mg/l	10/19/88	PFIZER-SW
Lead	0.009 mg/l	10/27/88	PFIZER-SW
Lead	0.024 mg/l	07/05/88	PFIZER-SW
Lead	0.012 mg/l	07/12/88	PFIZER-SW
Lead	0.014 mg/l	07/21/88	PFIZER-SW
Lead	0.016 mg/l	07/27/88	PFIZER-SW
Lead	0.100 mg/l	04/12/89	ROGERS CARTAGE
Lead	0.450 mg/l	03/15/89	ROGERS CARTAGE
Lead	0.250 mg/l	04/12/89	TRADE WASTE
Lead	0.023 mg/l	03/15/89	TRADE WASTE
Lead (avg)(1)	0.030 mg/l	04/88	PFIZER-SE
Lead (avg)(1)	0.010 mg/l	03/88	PFIZER-SE
Lead (avg)(1)	0.110 mg/l	02/88	PFIZER-SE
Lead (avg)(1)	0.020 mg/l	04/88	PFIZER-SW
Lead (avg)(1)	0.020 mg/l	03/88	PFIZER-SW
Lead (avg)(1)	0.010 mg/l	02/88	PFIZER-SW
Manganese	0.180 mg/l	04/12/89	BIG RIVER ZINC
Manganese	0.100 mg/l	03/15/89	BIG RIVER ZINC
Manganese	0.051 mg/l	04/12/89	CERRO-EAST
Manganese	0.160 mg/l	03/15/89	CERRO-EAST
Manganese	0.016 mg/l	04/12/89	CERRO-WEST
Manganese	0.012 mg/l	03/15/89	CERRO-WEST
Manganese	0.058 mg/l	04/12/89	CLAYTON
Manganese	0.100 mg/l	03/15/89	CLAYTON
Manganese	0.037 mg/l	04/12/89	ETHYL
Manganese	0.017 mg/l	03/15/89	ETHYL
Manganese	0.064 mg/l	04/12/89	MIDWEST RUBBER
Manganese	0.180 mg/l	03/15/89	MIDWEST RUBBER
Manganese	0.024 mg/l	04/12/89	MONSANTO
Manganese	0.033 mg/l	03/15/89	MONSANTO
Manganese	0.014 mg/l	02/15/89	MONSANTO
Manganese	0.019 mg/l	01/18/89	MONSANTO
Manganese	0.014 mg/l	12/14/88	MONSANTO
Manganese	0.014 mg/l	11/09/88	MONSANTO
Manganese	1.040 mg/l	10/12/88	MONSANTO
Manganese	0.043 mg/l	09/14/88	MONSANTO
Manganese	0.059 mg/l	08/10/88	MONSANTO
Manganese	0.027 mg/l	07/13/88	MONSANTO
Manganese	0.180 mg/l	04/12/89	ROGERS CARTAGE

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Manganese	0.036 mg/l	03/15/89	ROGERS CARTAGE
Manganese	0.830 mg/l	04/12/89	TRADE WASTE
Manganese	0.320 mg/l	03/15/89	TRADE WASTE
Mercury	0.000 mg/l	04/12/89	BIG RIVER ZINC
Mercury	0.000 mg/l	03/15/89	BIG RIVER ZINC
Mercury	0.000 mg/l	02/21/89	BIG RIVER ZINC
Mercury	0.000 mg/l	12/08/88	BIG RIVER ZINC
Mercury	0.000 mg/l	12/15/88	BIG RIVER ZINC
Mercury	0.001 mg/l	12/22/88	BIG RIVER ZINC
Mercury	0.000 mg/l	12/28/88	BIG RIVER ZINC
Mercury	0.000 mg/l	10/06/88	BIG RIVER ZINC
Mercury	0.000 mg/l	10/10/88	BIG RIVER ZINC
Mercury	0.000 mg/l	10/20/88	BIG RIVER ZINC
Mercury	0.000 mg/l	10/27/88	BIG RIVER ZINC
Mercury	0.000 mg/l	08/04/88	BIG RIVER ZINC
Mercury	0.000 mg/l	08/12/88	BIG RIVER ZINC
Mercury	0.000 mg/l	08/19/88	BIG RIVER ZINC
Mercury	0.000 mg/l	08/26/88	BIG RIVER ZINC
Mercury	0.002 mg/l	04/12/89	CERRO-EAST
Mercury	0.019 mg/l	03/15/89	CERRO-EAST
Mercury	0.003 mg/l	02/22/89	CERRO-EAST
Mercury	0.001 mg/l	12/07/88	CERRO-EAST
Mercury	0.001 mg/l	12/07/88	CERRO-EAST
Mercury	0.001 mg/l	12/14/88	CERRO-EAST
Mercury	0.001 mg/l	12/22/88	CERRO-EAST
Mercury	0.001 mg/l	12/29/88	CERRO-EAST
Mercury	0.001 mg/l	08/12/88	CERRO-EAST
Mercury	0.001 mg/l	08/19/88	CERRO-EAST
Mercury	0.001 mg/l	08/24/88	CERRO-EAST
Mercury	0.001 mg/l	10/07/88	CERRO-EAST
Mercury	0.002 mg/l	10/14/88	CERRO-EAST
Mercury	0.001 mg/l	10/21/88	CERRO-EAST
Mercury	0.007 mg/l	10/26/88	CERRO-EAST
Mercury	0.000 mg/l	04/12/89	CERRO-WEST
Mercury	0.000 mg/l	03/15/89	CERRO-WEST
Mercury	0.000 mg/l	02/22/89	CERRO-WEST
Mercury	0.003 mg/l	08/12/88	CERRO-WEST
Mercury	0.001 mg/l	08/19/88	CERRO-WEST
Mercury	0.000 mg/l	08/24/88	CERRO-WEST
Mercury	0.001 mg/l	10/07/88	CERRO-WEST
Mercury	0.001 mg/l	10/14/88	CERRO-WEST
Mercury	0.005 mg/l	10/21/88	CERRO-WEST
Mercury	0.009 mg/l	10/26/88	CERRO-WEST
Mercury	0.001 mg/l	12/07/88	CERRO-WEST
Mercury	0.001 mg/l	12/07/88	CERRO-WEST
Mercury	0.001 mg/l	12/14/88	CERRO-WEST
Mercury	0.001 mg/l	12/22/88	CERRO-WEST
Mercury	0.001 mg/l	12/29/88	CERRO-WEST
Mercury	0.000 mg/l	04/12/89	CLAYTON
Mercury	0.000 mg/l	03/15/89	CLAYTON
Mercury	0.001 mg/l	04/12/89	ETHYL
Mercury	0.000 mg/l	03/15/89	ETHYL
Mercury	0.000 mg/l	07/07/88	ETHYL
Mercury	0.000 mg/l	07/13/88	ETHYL
Mercury	0.000 mg/l	07/21/88	ETHYL
Mercury	0.000 mg/l	07/28/88	ETHYL
Mercury	0.000 mg/l	10/06/88	ETHYL

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APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Mercury	0.000 mg/l	10/13/88	ETHYL
Mercury	0.000 mg/l	10/20/88	ETHYL
Mercury	0.000 mg/l	10/27/88	ETHYL
Mercury	0.000 mg/l	12/09/88	ETHYL
Mercury	0.000 mg/l	12/15/88	ETHYL
Mercury	0.001 mg/l	12/22/88	ETHYL
Mercury	0.000 mg/l	12/29/88	ETHYL
Mercury	0.000 mg/l	04/18/89	LANCHEM
Mercury	0.000 mg/l	03/21/89	LANCHEM
Mercury	0.007 mg/l	01/26/89	LANCHEM
Mercury	0.003 mg/l	11/01/88	LANCHEM
Mercury	0.000 mg/l	04/12/89	MIDWEST RUBBER
Mercury	0.001 mg/l	03/15/89	MIDWEST RUBBER
Mercury	0.000 mg/l	08/08/88	MIDWEST RUBBER
Mercury	0.000 mg/l	08/17/88	MIDWEST RUBBER
Mercury	0.000 mg/l	08/24/88	MIDWEST RUBBER
Mercury	0.000 mg/l	08/31/88	MIDWEST RUBBER
Mercury	0.000 mg/l	10/04/88	MIDWEST RUBBER
Mercury	0.000 mg/l	10/12/88	MIDWEST RUBBER
Mercury	0.000 mg/l	10/18/88	MIDWEST RUBBER
Mercury	0.000 mg/l	10/26/88	MIDWEST RUBBER
Mercury	0.000 mg/l	02/21/89	MIDWEST RUBBER
Mercury	0.000 mg/l	04/12/89	MONSANTO
Mercury	0.001 mg/l	03/15/89	MONSANTO
Mercury	0.001 mg/l	02/15/89	MONSANTO
Mercury	0.001 mg/l	01/18/89	MONSANTO
Mercury	0.001 mg/l	12/19/88	MONSANTO
Mercury	0.001 mg/l	12/14/88	MONSANTO
Mercury	0.001 mg/l	11/09/88	MONSANTO
Mercury	0.000 mg/l	10/06/88	MONSANTO
Mercury	0.000 mg/l	10/13/88	MONSANTO
Mercury	0.001 mg/l	10/18/88	MONSANTO
Mercury	0.001 mg/l	10/12/88	MONSANTO
Mercury	0.002 mg/l	09/14/88	MONSANTO
Mercury	0.002 mg/l	08/15/88	MONSANTO
Mercury	0.003 mg/l	08/23/88	MONSANTO
Mercury	0.001 mg/l	08/29/88	MONSANTO
Mercury	0.002 mg/l	09/06/88	MONSANTO
Mercury	0.001 mg/l	08/10/88	MONSANTO
Mercury	0.003 mg/l	07/13/88	MONSANTO
Mercury	0.000 mg/l	04/18/89	MUSICK
Mercury	0.000 mg/l	03/21/89	MUSICK
Mercury	0.000 mg/l	11/07/88	MUSICK
Mercury	0.001 mg/l	12/05/88	MUSICK
Mercury	0.000 mg/l	01/09/89	MUSICK
Mercury	0.000 mg/l	02/13/89	MUSICK
Mercury	0.000 mg/l	04/19/89	PFIZER-SE
Mercury	0.000 mg/l	03/21/89	PFIZER-SE
Mercury	0.000 mg/l	02/27/89	PFIZER-SE
Mercury	0.000 mg/l	12/09/88	PFIZER-SE
Mercury	0.000 mg/l	12/15/88	PFIZER-SE
Mercury	0.000 mg/l	12/20/88	PFIZER-SE
Mercury	0.000 mg/l	12/28/88	PFIZER-SE
Mercury	0.000 mg/l	10/03/88	PFIZER-SE
Mercury	0.000 mg/l	10/12/88	PFIZER-SE
Mercury	0.000 mg/l	10/19/88	PFIZER-SE
Mercury	0.000 mg/l	10/27/88	PFIZER-SE
Mercury	0.001 mg/l	07/05/88	PFIZER-SE

~~EPA/CERRO COPPER/[illegible]/PCB ATTORNEY WORK PRODUCT / ATTORNEY CLIENT PRIVILEGE~~

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Mercury	0.003 mg/l	07/12/88	PFIZER-SE
Mercury	0.000 mg/l	07/21/88	PFIZER-SE
Mercury	0.001 mg/l	07/27/88	PFIZER-SE
Mercury	0.000 mg/l	04/19/89	PFIZER-SW
Mercury	0.000 mg/l	03/21/89	PFIZER-SW
Mercury	0.000 mg/l	02/27/89	PFIZER-SW
Mercury	0.000 mg/l	12/09/88	PFIZER-SW
Mercury	0.000 mg/l	12/15/88	PFIZER-SW
Mercury	0.000 mg/l	12/20/88	PFIZER-SW
Mercury	0.000 mg/l	12/28/88	PFIZER-SW
Mercury	0.000 mg/l	10/03/88	PFIZER-SW
Mercury	0.000 mg/l	10/12/88	PFIZER-SW
Mercury	0.000 mg/l	10/19/88	PFIZER-SW
Mercury	0.000 mg/l	10/27/88	PFIZER-SW
Mercury	0.002 mg/l	07/05/88	PFIZER-SW
Mercury	0.001 mg/l	07/12/88	PFIZER-SW
Mercury	0.000 mg/l	07/21/88	PFIZER-SW
Mercury	0.001 mg/l	07/27/88	PFIZER-SW
Mercury	0.000 mg/l	04/12/89	ROGERS CARTAGE
Mercury	0.000 mg/l	03/15/89	ROGERS CARTAGE
Mercury	0.000 mg/l	04/12/89	TRADE WASTE
Mercury	0.000 mg/l	03/15/89	TRADE WASTE
Mercury (avg)(1)	0.004 mg/l	03/88	PFIZER-SE
Mercury (avg)(1)	0.003 mg/l	02/88	PFIZER-SE
Mercury (avg)(1)	0.002 mg/l	03/88	PFIZER-SW
Mercury (avg)(1)	0.001 mg/l	02/88	PFIZER-SW
Methyl-Benzenamine	120. ug/l	10/12/88	MONSANTO
Methyl-Pyridine	4000. ug/l	10/12/88	MONSANTO
Methylene Chloride	4. ug/l	04/12/89	BIG RIVER ZINC
Methylene Chloride	4. ug/l	04/12/89	CERRO-EAST
Methylene Chloride	5. ug/l	04/12/89	CERRO-EAST
Methylene Chloride	4. ug/l	03/15/89	CERRO-EAST
Methylene Chloride	110. ug/l	04/12/89	CERRO-WEST
Methylene Chloride	4. ug/l	03/15/89	CERRO-WEST
Methylene Chloride	8000. ug/l	04/12/89	CLAYTON
Methylene Chloride	2600. ug/l	03/15/89	CLAYTON
Methylene Chloride	5700. ug/l	04/12/89	ETHYL
Methylene Chloride	490. ug/l	03/15/89	ETHYL
Methylene Chloride	20. ug/l	11/01/88	LANCHEM
Methylene Chloride	4. ug/l	04/12/89	MIDWEST RUBBER
Methylene Chloride	24. ug/l	03/15/89	MIDWEST RUBBER
Methylene Chloride	400. ug/l	03/15/89	MONSANTO
Methylene Chloride	48. ug/l	02/15/89	MONSANTO
Methylene Chloride	520. ug/l	01/18/89	MONSANTO
Methylene Chloride	2300. ug/l	12/14/88	MONSANTO
Methylene Chloride	2800. ug/l	10/18/88	MONSANTO
Methylene Chloride	1700. ug/l	10/12/88	MONSANTO
Methylene Chloride	403. ug/l	08/15/88	MONSANTO

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION		SAMPLING DATE	INDUSTRY
Methylene Chloride	3700.	ug/l	08/10/88	MONSANTO
Methylene Chloride	890.	ug/l	04/12/89	ROGERS CARTAGE
Methylene Chloride	440.	ug/l	03/15/89	ROGERS CARTAGE
Methylene Chloride	4.	ug/l	04/12/89	TRADE WASTE
Methylene Chloride	6.	ug/l	04/12/89	TRADE WASTE
Methylene Chloride	3.	ug/l	03/15/89	TRADE WASTE
N-Nitrosodiphenylamine	3.	ug/l	03/15/89	CERRO-WEST
Naphthalene	15.	ug/l	03/15/89	CLAYTON
Naphthalene	120.	ug/l	04/12/89	ETHYL
Naphthalene	370.	ug/l	03/15/89	ETHYL
Naphthalene	910.	ug/l	03/15/89	MIDWEST RUBBER
Naphthalene	80.	ug/l	03/15/89	ROGERS CARTAGE
Nickel	0.000	mg/l	04/12/89	BIG RIVER ZINC
Nickel	0.000	mg/l	03/15/89	BIG RIVER ZINC
Nickel	0.000	mg/l	02/21/89	BIG RIVER ZINC
Nickel	0.060	mg/l	12/08/88	BIG RIVER ZINC
Nickel	0.070	mg/l	10/06/88	BIG RIVER ZINC
Nickel	0.060	mg/l	08/04/88	BIG RIVER ZINC
Nickel	0.100	mg/l	08/12/88	BIG RIVER ZINC
Nickel	0.440	mg/l	04/27/89	CERRO-EAST
Nickel	5.700	mg/l	05/01/89	CERRO-EAST
Nickel	15.740	mg/l	05/09/89	CERRO-EAST
Nickel	12.130	mg/l	05/17/89	CERRO-EAST
Nickel	20.100	mg/l	05/25/89	CERRO-EAST
Nickel	9.800	mg/l	04/12/89	CERRO-EAST
Nickel	9.800	mg/l	03/15/89	CERRO-EAST
Nickel	86.100	mg/l	02/22/89	CERRO-EAST
Nickel	21.500	mg/l	12/07/88	CERRO-EAST
Nickel	0.550	mg/l	08/05/88	CERRO-EAST
Nickel	57.000	mg/l	08/12/88	CERRO-EAST
Nickel	0.320	mg/l	08/19/88	CERRO-EAST
Nickel	28.000	mg/l	08/24/88	CERRO-EAST
Nickel	43.000	mg/l	10/07/88	CERRO-EAST
Nickel	118.000	mg/l	10/14/88	CERRO-EAST
Nickel	77.000	mg/l	10/21/88	CERRO-EAST
Nickel	120.000	mg/l	10/26/88	CERRO-EAST
Nickel	3.920	mg/l	06/02/89	CERRO-EAST
Nickel	102.230	mg/l	06/05/89	CERRO-EAST
Nickel	55.190	mg/l	06/13/89	CERRO-EAST
Nickel	0.000	mg/l	04/27/89	CERRO-WEST
Nickel	0.030	mg/l	05/01/89	CERRO-WEST
Nickel	0.200	mg/l	05/09/89	CERRO-WEST
Nickel	0.000	mg/l	04/12/89	CERRO-WEST
Nickel	0.060	mg/l	03/15/89	CERRO-WEST
Nickel	0.040	mg/l	02/22/89	CERRO-WEST
Nickel	0.130	mg/l	08/12/88	CERRO-WEST
Nickel	0.050	mg/l	08/19/88	CERRO-WEST
Nickel	0.460	mg/l	08/24/88	CERRO-WEST
Nickel	0.050	mg/l	10/07/88	CERRO-WEST
Nickel	0.050	mg/l	10/14/88	CERRO-WEST
Nickel	0.370	mg/l	10/21/88	CERRO-WEST
Nickel	0.050	mg/l	10/26/88	CERRO-WEST
Nickel	0.050	mg/l	12/07/88	CERRO-WEST

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Nickel	0.480 mg/l	06/02/89	CERRO-WEST
Nickel	0.010 mg/l	06/05/89	CERRO-WEST
Nickel	0.000 mg/l	06/13/89	CERRO-WEST
Nickel	0.000 mg/l	04/12/89	CLAYTON
Nickel	0.000 mg/l	03/15/89	CLAYTON
Nickel	0.058 mg/l	04/12/89	ETHYL
Nickel	0.075 mg/l	03/15/89	ETHYL
Nickel	0.050 mg/l	07/07/88	ETHYL
Nickel	0.170 mg/l	07/13/88	ETHYL
Nickel	0.070 mg/l	07/21/88	ETHYL
Nickel	0.090 mg/l	07/28/88	ETHYL
Nickel	0.060 mg/l	10/06/88	ETHYL
Nickel	0.110 mg/l	10/13/88	ETHYL
Nickel	0.060 mg/l	10/20/88	ETHYL
Nickel	0.050 mg/l	10/27/88	ETHYL
Nickel	0.130 mg/l	12/09/88	ETHYL
Nickel	0.140 mg/l	12/15/88	ETHYL
Nickel	0.060 mg/l	12/22/88	ETHYL
Nickel	0.005 mg/l	12/29/88	ETHYL
Nickel	0.000 mg/l	04/18/89	LANCHEM
Nickel	0.000 mg/l	03/21/89	LANCHEM
Nickel	0.010 mg/l	01/26/89	LANCHEM
Nickel	0.090 mg/l	11/01/88	LANCHEM
Nickel	0.000 mg/l	04/12/89	MIDWEST RUBBER
Nickel	0.000 mg/l	03/15/89	MIDWEST RUBBER
Nickel	0.021 mg/l	08/08/88	MIDWEST RUBBER
Nickel	0.021 mg/l	08/17/88	MIDWEST RUBBER
Nickel	0.021 mg/l	08/24/88	MIDWEST RUBBER
Nickel	0.026 mg/l	10/04/88	MIDWEST RUBBER
Nickel	0.065 mg/l	10/12/88	MIDWEST RUBBER
Nickel	0.060 mg/l	10/18/88	MIDWEST RUBBER
Nickel	0.012 mg/l	10/26/88	MIDWEST RUBBER
Nickel	0.000 mg/l	02/21/89	MIDWEST RUBBER
Nickel	0.026 mg/l	04/12/89	MONSANTO
Nickel	0.037 mg/l	03/15/89	MONSANTO
Nickel	0.084 mg/l	02/15/89	MONSANTO
Nickel	0.035 mg/l	01/18/89	MONSANTO
Nickel	0.270 mg/l	12/14/88	MONSANTO
Nickel	0.050 mg/l	12/19/88	MONSANTO
Nickel	0.260 mg/l	12/27/88	MONSANTO
Nickel	0.023 mg/l	12/14/88	MONSANTO
Nickel	0.000 mg/l	11/09/88	MONSANTO
Nickel	0.140 mg/l	10/06/88	MONSANTO
Nickel	0.060 mg/l	10/13/88	MONSANTO
Nickel	0.075 mg/l	10/12/88	MONSANTO
Nickel	0.129 mg/l	09/14/88	MONSANTO
Nickel	0.039 mg/l	08/15/88	MONSANTO
Nickel	0.040 mg/l	08/23/88	MONSANTO
Nickel	0.060 mg/l	08/29/88	MONSANTO
Nickel	0.140 mg/l	08/10/88	MONSANTO
Nickel	0.038 mg/l	07/13/88	MONSANTO
Nickel	53.000 mg/l	04/18/89	MUSICK
Nickel	6.100 mg/l	03/21/89	MUSICK
Nickel	38.620 mg/l	05/17/89	MUSICK
Nickel	0.800 mg/l	11/07/88	MUSICK
Nickel	0.110 mg/l	12/05/88	MUSICK
Nickel	0.150 mg/l	01/09/89	MUSICK

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Nickel	0.100 mg/l	02/13/89	MUSICK
Nickel	13.380 mg/l	06/13/89	MUSICK
Nickel	0.025 mg/l	04/19/89	PFIZER-SE
Nickel	0.097 mg/l	03/21/89	PFIZER-SE
Nickel	25.000 mg/l	02/27/89	PFIZER-SE
Nickel	0.006 mg/l	12/09/88	PFIZER-SE
Nickel	0.024 mg/l	12/15/88	PFIZER-SE
Nickel	0.340 mg/l	12/20/88	PFIZER-SE
Nickel	0.064 mg/l	12/28/88	PFIZER-SE
Nickel	0.025 mg/l	10/03/88	PFIZER-SE
Nickel	0.058 mg/l	10/12/88	PFIZER-SE
Nickel	0.070 mg/l	10/19/88	PFIZER-SE
Nickel	0.053 mg/l	10/27/88	PFIZER-SE
Nickel	0.100 mg/l	07/05/88	PFIZER-SE
Nickel	0.067 mg/l	07/12/88	PFIZER-SE
Nickel	0.076 mg/l	07/21/88	PFIZER-SE
Nickel	0.015 mg/l	07/27/88	PFIZER-SE
Nickel	0.000 mg/l	04/19/89	PFIZER-SW
Nickel	0.000 mg/l	03/21/89	PFIZER-SW
Nickel	0.000 mg/l	02/27/89	PFIZER-SW
Nickel	0.024 mg/l	12/09/88	PFIZER-SW
Nickel	0.006 mg/l	12/15/88	PFIZER-SW
Nickel	0.008 mg/l	12/20/88	PFIZER-SW
Nickel	0.010 mg/l	12/28/88	PFIZER-SW
Nickel	0.004 mg/l	10/03/88	PFIZER-SW
Nickel	0.005 mg/l	10/12/88	PFIZER-SW
Nickel	0.006 mg/l	10/19/88	PFIZER-SW
Nickel	0.007 mg/l	10/27/88	PFIZER-SW
Nickel	0.014 mg/l	07/05/88	PFIZER-SW
Nickel	0.013 mg/l	07/12/88	PFIZER-SW
Nickel	0.010 mg/l	07/21/88	PFIZER-SW
Nickel	0.012 mg/l	07/27/88	PFIZER-SW
Nickel	0.072 mg/l	04/12/89	ROGERS CARTAGE
Nickel	0.023 mg/l	03/15/89	ROGERS CARTAGE
Nickel	0.130 mg/l	04/12/89	TRADE WASTE
Nickel	0.045 mg/l	03/15/89	TRADE WASTE
Nickel (avg)(1)	0.160 mg/l	04/88	PFIZER-SE
Nickel (avg)(1)	0.200 mg/l	03/88	PFIZER-SE
Nickel (avg)(1)	0.270 mg/l	02/88	PFIZER-SE
Nickel (avg)(1)	0.000 mg/l	04/88	PFIZER-SW
Nickel (avg)(1)	0.010 mg/l	03/88	PFIZER-SW
Nickel (avg)(1)	0.060 mg/l	02/88	PFIZER-SW
Nitro-Phenyl-Benzenamine	140. ug/l	07/13/88	MONSANTO
Nitro-Phenyl-Benzenamine	990. ug/l	07/13/88	MONSANTO
Nitrobenzene	160. ug/l	04/12/89	MONSANTO
Nitrobenzene	140. ug/l	03/15/89	MONSANTO
Nitrobenzene	210. ug/l	02/15/89	MONSANTO
Nitrobenzene	166. ug/l	12/14/88	MONSANTO
Nitrobenzene	53. ug/l	12/14/88	MONSANTO
Nitrobenzene	75. ug/l	11/09/88	MONSANTO
Nitrobenzene	67. ug/l	10/12/88	MONSANTO
Nitrobenzene	170. ug/l	09/14/88	MONSANTO
Nitrobenzene	58. ug/l	08/10/88	MONSANTO
Nitrobenzene	110. ug/l	07/13/88	MONSANTO

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Octadecanoic Acid Ester	2000. ug/l	04/12/89	CERRO-EAST
Octadecanoic Acid Ester	2000. ug/l	04/12/89	CLAYTON
Octanoic Acid	40. ug/l	04/12/89	TRADE WASTE
Oil and Grease	5.000 mg/l	04/12/89	BIG RIVER ZINC
Oil and Grease	0.000 mg/l	03/15/89	BIG RIVER ZINC
Oil and Grease	6.900 mg/l	02/21/89	BIG RIVER ZINC
Oil and Grease	3.900 mg/l	12/08/88	BIG RIVER ZINC
Oil and Grease	2.200 mg/l	12/15/88	BIG RIVER ZINC
Oil and Grease	1.000 mg/l	12/22/88	BIG RIVER ZINC
Oil and Grease	6.100 mg/l	12/28/88	BIG RIVER ZINC
Oil and Grease	1.000 mg/l	10/06/88	BIG RIVER ZINC
Oil and Grease	6.200 mg/l	10/10/88	BIG RIVER ZINC
Oil and Grease	1.900 mg/l	10/20/88	BIG RIVER ZINC
Oil and Grease	5.800 mg/l	10/27/88	BIG RIVER ZINC
Oil and Grease	3.900 mg/l	08/04/88	BIG RIVER ZINC
Oil and Grease	4.200 mg/l	08/12/88	BIG RIVER ZINC
Oil and Grease	1.000 mg/l	08/19/88	BIG RIVER ZINC
Oil and Grease	3.700 mg/l	08/26/88	BIG RIVER ZINC
Oil and Grease	30.100 mg/l	04/27/89	CERRO-EAST
Oil and Grease	543.800 mg/l	05/01/89	CERRO-EAST
Oil and Grease	246.700 mg/l	05/09/89	CERRO-EAST
Oil and Grease	514.700 mg/l	05/17/89	CERRO-EAST
Oil and Grease	32.000 mg/l	05/25/89	CERRO-EAST
Oil and Grease	1300.000 mg/l	04/12/89	CERRO-EAST
Oil and Grease	129.000 mg/l	03/15/89	CERRO-EAST
Oil and Grease	40.500 mg/l	02/22/89	CERRO-EAST
Oil and Grease	194.000 mg/l	12/07/88	CERRO-EAST
Oil and Grease	216.000 mg/l	12/07/88	CERRO-EAST
Oil and Grease	498.000 mg/l	12/14/88	CERRO-EAST
Oil and Grease	474.000 mg/l	12/22/88	CERRO-EAST
Oil and Grease	70.000 mg/l	12/29/88	CERRO-EAST
Oil and Grease	450.000 mg/l	08/05/88	CERRO-EAST
Oil and Grease	316.000 mg/l	08/12/88	CERRO-EAST
Oil and Grease	318.000 mg/l	08/19/88	CERRO-EAST
Oil and Grease	77.000 mg/l	08/24/88	CERRO-EAST
Oil and Grease	100.000 mg/l	08/24/88	CERRO-EAST
Oil and Grease	110.000 mg/l	08/24/88	CERRO-EAST
Oil and Grease	7.100 mg/l	08/24/88	CERRO-EAST
Oil and Grease	180.000 mg/l	08/24/88	CERRO-EAST
Oil and Grease	250.000 mg/l	10/07/88	CERRO-EAST
Oil and Grease	300.000 mg/l	10/14/88	CERRO-EAST
Oil and Grease	497.000 mg/l	10/21/88	CERRO-EAST
Oil and Grease	240.000 mg/l	10/26/88	CERRO-EAST
Oil and Grease	571.600 mg/l	06/02/89	CERRO-EAST
Oil and Grease	639.300 mg/l	06/05/89	CERRO-EAST
Oil and Grease	987.300 mg/l	06/13/89	CERRO-EAST
Oil and Grease	11.000 mg/l	04/27/89	CERRO-WEST
Oil and Grease	9.400 mg/l	05/01/89	CERRO-WEST
Oil and Grease	4.700 mg/l	05/09/89	CERRO-WEST
Oil and Grease	15.900 mg/l	05/17/89	CERRO-WEST
Oil and Grease	5.400 mg/l	05/25/89	CERRO-WEST
Oil and Grease	8.000 mg/l	04/12/89	CERRO-WEST
Oil and Grease	17.000 mg/l	03/15/89	CERRO-WEST
Oil and Grease	12.000 mg/l	02/22/89	CERRO-WEST
Oil and Grease	4.000 mg/l	08/12/88	CERRO-WEST
Oil and Grease	2.000 mg/l	08/19/88	CERRO-WEST
Oil and Grease	8.100 mg/l	08/24/88	CERRO-WEST
Oil and Grease	5.100 mg/l	08/24/88	CERRO-WEST

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Oil and Grease	7.700 mg/l	08/24/88	CERRO-WEST
Oil and Grease	12.000 mg/l	08/24/88	CERRO-WEST
Oil and Grease	3.700 mg/l	08/24/88	CERRO-WEST
Oil and Grease	3.100 mg/l	08/24/88	CERRO-WEST
Oil and Grease	11.000 mg/l	10/07/88	CERRO-WEST
Oil and Grease	5.000 mg/l	10/14/88	CERRO-WEST
Oil and Grease	49.000 mg/l	10/21/88	CERRO-WEST
Oil and Grease	4.100 mg/l	10/26/88	CERRO-WEST
Oil and Grease	84.000 mg/l	12/07/88	CERRO-WEST
Oil and Grease	69.000 mg/l	12/07/88	CERRO-WEST
Oil and Grease	55.000 mg/l	12/14/88	CERRO-WEST
Oil and Grease	41.000 mg/l	12/22/88	CERRO-WEST
Oil and Grease	11.000 mg/l	12/29/88	CERRO-WEST
Oil and Grease	4.800 mg/l	06/02/89	CERRO-WEST
Oil and Grease	51.200 mg/l	06/05/89	CERRO-WEST
Oil and Grease	16.300 mg/l	06/13/89	CERRO-WEST
Oil and Grease	6.000 mg/l	04/12/89	CLAYTON
Oil and Grease	7.200 mg/l	03/15/89	CLAYTON
Oil and Grease	230.000 mg/l	04/12/89	ETHYL
Oil and Grease	211.000 mg/l	03/15/89	ETHYL
Oil and Grease	25.000 mg/l	07/07/88	ETHYL
Oil and Grease	157.000 mg/l	07/13/88	ETHYL
Oil and Grease	33.300 mg/l	07/21/88	ETHYL
Oil and Grease	211.000 mg/l	07/28/88	ETHYL
Oil and Grease	47.500 mg/l	10/06/88	ETHYL
Oil and Grease	257.000 mg/l	10/13/88	ETHYL
Oil and Grease	276.000 mg/l	10/20/88	ETHYL
Oil and Grease	50.800 mg/l	10/27/88	ETHYL
Oil and Grease	23.100 mg/l	12/09/88	ETHYL
Oil and Grease	119.000 mg/l	12/15/88	ETHYL
Oil and Grease	484.000 mg/l	12/22/88	ETHYL
Oil and Grease	887.000 mg/l	12/29/88	ETHYL
Oil and Grease	8.000 mg/l	04/18/89	LANCHEM
Oil and Grease	8.700 mg/l	03/21/89	LANCHEM
Oil and Grease	28.000 mg/l	01/26/89	LANCHEM
Oil and Grease	12.000 mg/l	11/01/88	LANCHEM
Oil and Grease	76.000 mg/l	04/12/89	MIDWEST RUBBER
Oil and Grease	58.000 mg/l	03/15/89	MIDWEST RUBBER
Oil and Grease	90.600 mg/l	08/08/88	MIDWEST RUBBER
Oil and Grease	17.100 mg/l	08/17/88	MIDWEST RUBBER
Oil and Grease	52.900 mg/l	08/24/88	MIDWEST RUBBER
Oil and Grease	52.900 mg/l	08/31/88	MIDWEST RUBBER
Oil and Grease	162.000 mg/l	10/04/88	MIDWEST RUBBER
Oil and Grease	15.000 mg/l	10/12/88	MIDWEST RUBBER
Oil and Grease	137.000 mg/l	10/18/88	MIDWEST RUBBER
Oil and Grease	140.000 mg/l	10/26/88	MIDWEST RUBBER
Oil and Grease	541.000 mg/l	02/21/89	MIDWEST RUBBER
Oil and Grease	160.000 mg/l	04/12/89	MONSANTO
Oil and Grease	160.000 mg/l	04/12/89	MONSANTO
Oil and Grease	37.000 mg/l	03/15/89	MONSANTO
Oil and Grease	45.000 mg/l	02/15/89	MONSANTO
Oil and Grease	22.000 mg/l	01/18/89	MONSANTO
Oil and Grease	90.700 mg/l	12/07/88	MONSANTO
Oil and Grease	58.800 mg/l	12/14/88	MONSANTO
Oil and Grease	59.300 mg/l	12/19/88	MONSANTO
Oil and Grease	46.300 mg/l	12/27/88	MONSANTO
Oil and Grease	60.000 mg/l	12/14/88	MONSANTO
Oil and Grease	170.000 mg/l	11/09/88	MONSANTO

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Oil and Grease	78.500 mg/l	10/06/88	MONSANTO
Oil and Grease	28.300 mg/l	10/13/88	MONSANTO
Oil and Grease	176.000 mg/l	10/18/88	MONSANTO
Oil and Grease	121.000 mg/l	10/26/88	MONSANTO
Oil and Grease	50.000 mg/l	10/12/88	MONSANTO
Oil and Grease	29.000 mg/l	09/14/88	MONSANTO
Oil and Grease	2.000 mg/l	08/15/88	MONSANTO
Oil and Grease	1.000 mg/l	08/23/88	MONSANTO
Oil and Grease	1.000 mg/l	08/29/88	MONSANTO
Oil and Grease	3.000 mg/l	09/06/88	MONSANTO
Oil and Grease	28.000 mg/l	08/10/88	MONSANTO
Oil and Grease	340.000 mg/l	07/13/88	MONSANTO
Oil and Grease	0.000 mg/l	04/18/89	MUSICK
Oil and Grease	0.000 mg/l	03/21/89	MUSICK
Oil and Grease	1.000 mg/l	01/04/89	MUSICK
Oil and Grease	1.000 mg/l	12/21/88	MUSICK
Oil and Grease	0.000 mg/l	04/19/89	PFIZER-SE
Oil and Grease	0.000 mg/l	03/21/89	PFIZER-SE
Oil and Grease	0.000 mg/l	02/27/89	PFIZER-SE
Oil and Grease	5.000 mg/l	12/09/88	PFIZER-SE
Oil and Grease	5.000 mg/l	12/15/88	PFIZER-SE
Oil and Grease	8.800 mg/l	12/20/88	PFIZER-SE
Oil and Grease	5.000 mg/l	12/28/88	PFIZER-SE
Oil and Grease	14.600 mg/l	10/03/88	PFIZER-SE
Oil and Grease	5.000 mg/l	10/12/88	PFIZER-SE
Oil and Grease	28.500 mg/l	10/19/88	PFIZER-SE
Oil and Grease	5.000 mg/l	10/27/88	PFIZER-SE
Oil and Grease	7.370 mg/l	07/05/88	PFIZER-SE
Oil and Grease	5.000 mg/l	07/12/88	PFIZER-SE
Oil and Grease	5.700 mg/l	07/21/88	PFIZER-SE
Oil and Grease	6.400 mg/l	07/27/88	PFIZER-SE
Oil and Grease	12.000 mg/l	04/19/89	PFIZER-SW
Oil and Grease	0.000 mg/l	03/21/89	PFIZER-SW
Oil and Grease	23.500 mg/l	02/27/89	PFIZER-SW
Oil and Grease	10.000 mg/l	12/09/88	PFIZER-SW
Oil and Grease	6.300 mg/l	12/15/88	PFIZER-SW
Oil and Grease	14.100 mg/l	12/20/88	PFIZER-SW
Oil and Grease	5.000 mg/l	12/28/88	PFIZER-SW
Oil and Grease	5.000 mg/l	10/03/88	PFIZER-SW
Oil and Grease	19.900 mg/l	10/12/88	PFIZER-SW
Oil and Grease	249.500 mg/l	10/19/88	PFIZER-SW
Oil and Grease	34.200 mg/l	10/27/88	PFIZER-SW
Oil and Grease	5.000 mg/l	07/05/88	PFIZER-SW
Oil and Grease	5.000 mg/l	07/12/88	PFIZER-SW
Oil and Grease	7.500 mg/l	07/21/88	PFIZER-SW
Oil and Grease	10.500 mg/l	07/27/88	PFIZER-SW
Oil and Grease	190.000 mg/l	04/12/89	ROGERS CARTAGE
Oil and Grease	20.000 mg/l	03/15/89	ROGERS CARTAGE
Oil and Grease	8.000 mg/l	04/12/89	TRADE WASTE
Oil and Grease	0.000 mg/l	03/15/89	TRADE WASTE
Phenanthrene	14. ug/l	03/15/89	CLAYTON
Phenanthrene	67. ug/l	03/15/89	ROGERS CARTAGE
Phenol	10. ug/l	03/15/89	CLAYTON
Phenol	270. ug/l	04/12/89	ETHYL

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Phenol	190. ug/l	03/15/89	ETHYL
Phenol	67. ug/l	02/15/89	MONSANTO
Phenol	21. ug/l	12/14/88	MONSANTO
Phenol	81. ug/l	12/14/88	MONSANTO
Phenol	110. ug/l	09/14/88	MONSANTO
Phenol	80.300 ug/l	08/15/88	MONSANTO
Phenol	89. ug/l	08/10/88	MONSANTO
Phenol	150. ug/l	03/15/89	ROGERS CARTAGE
Phenolics	0.067 mg/l	04/12/89	BIG RIVER ZINC
Phenolics	0.084 mg/l	03/15/89	BIG RIVER ZINC
Phenolics	0.000 mg/l	02/21/89	BIG RIVER ZINC
Phenolics	0.010 mg/l	07/27/88	BIG RIVER ZINC
Phenolics	0.000 mg/l	07/31/88	BIG RIVER ZINC
Phenolics	0.009 mg/l	08/02/88	BIG RIVER ZINC
Phenolics	0.014 mg/l	08/06/88	BIG RIVER ZINC
Phenolics	0.028 mg/l	08/10/88	BIG RIVER ZINC
Phenolics	0.015 mg/l	08/14/88	BIG RIVER ZINC
Phenolics	0.017 mg/l	08/16/88	BIG RIVER ZINC
Phenolics	0.017 mg/l	08/20/88	BIG RIVER ZINC
Phenolics	0.000 mg/l	04/12/89	CERRO-EAST
Phenolics	0.460 mg/l	03/15/89	CERRO-EAST
Phenolics	0.240 mg/l	02/22/89	CERRO-EAST
Phenolics	0.025 mg/l	07/27/88	CERRO-EAST
Phenolics	0.013 mg/l	07/31/88	CERRO-EAST
Phenolics	0.015 mg/l	08/02/88	CERRO-EAST
Phenolics	0.022 mg/l	08/06/88	CERRO-EAST
Phenolics	0.026 mg/l	08/10/88	CERRO-EAST
Phenolics	0.010 mg/l	08/14/88	CERRO-EAST
Phenolics	0.020 mg/l	08/16/88	CERRO-EAST
Phenolics	0.022 mg/l	08/20/88	CERRO-EAST
Phenolics	0.012 mg/l	04/12/89	CERRO-WEST
Phenolics	0.000 mg/l	03/15/89	CERRO-WEST
Phenolics	0.060 mg/l	02/22/89	CERRO-WEST
Phenolics	0.052 mg/l	07/27/88	CERRO-WEST
Phenolics	0.066 mg/l	07/31/88	CERRO-WEST
Phenolics	0.024 mg/l	08/02/88	CERRO-WEST
Phenolics	0.010 mg/l	08/06/88	CERRO-WEST
Phenolics	0.131 mg/l	08/10/88	CERRO-WEST
Phenolics	0.013 mg/l	08/14/88	CERRO-WEST
Phenolics	0.029 mg/l	08/16/88	CERRO-WEST
Phenolics	0.032 mg/l	08/20/88	CERRO-WEST
Phenolics	0.160 mg/l	04/12/89	CLAYTON
Phenolics	0.120 mg/l	03/15/89	CLAYTON
Phenolics	0.081 mg/l	07/27/88	CLAYTON
Phenolics	0.092 mg/l	07/31/88	CLAYTON
Phenolics	0.073 mg/l	08/02/88	CLAYTON
Phenolics	0.074 mg/l	08/06/88	CLAYTON
Phenolics	0.118 mg/l	08/10/88	CLAYTON
Phenolics	0.120 mg/l	08/14/88	CLAYTON
Phenolics	0.086 mg/l	08/16/88	CLAYTON
Phenolics	0.142 mg/l	08/20/88	CLAYTON
Phenolics	1.000 mg/l	04/12/89	ETHYL
Phenolics	1.000 mg/l	03/15/89	ETHYL
Phenolics	0.371 mg/l	07/27/88	ETHYL
Phenolics	0.245 mg/l	07/31/88	ETHYL
Phenolics	2.304 mg/l	08/02/88	ETHYL

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Phenolics	0.079 mg/l	08/06/88	ETHYL
Phenolics	0.147 mg/l	08/10/88	ETHYL
Phenolics	0.178 mg/l	08/14/88	ETHYL
Phenolics	0.070 mg/l	08/16/88	ETHYL
Phenolics	0.135 mg/l	08/20/88	ETHYL
Phenolics	0.100 mg/l	04/18/89	LANCHEM
Phenolics	0.220 mg/l	03/21/89	LANCHEM
Phenolics	1.200 mg/l	01/26/89	LANCHEM
Phenolics	0.030 mg/l	11/01/88	LANCHEM
Phenolics	1.500 mg/l	04/12/89	MIDWEST RUBBER
Phenolics	3.300 mg/l	03/15/89	MIDWEST RUBBER
Phenolics	1.500 mg/l	02/21/89	MIDWEST RUBBER
Phenolics	0.179 mg/l	07/27/88	MIDWEST RUBBER
Phenolics	0.219 mg/l	07/31/88	MIDWEST RUBBER
Phenolics	0.563 mg/l	08/02/88	MIDWEST RUBBER
Phenolics	0.118 mg/l	08/06/88	MIDWEST RUBBER
Phenolics	0.101 mg/l	08/10/88	MIDWEST RUBBER
Phenolics	0.257 mg/l	08/14/88	MIDWEST RUBBER
Phenolics	0.047 mg/l	08/16/88	MIDWEST RUBBER
Phenolics	0.180 mg/l	08/20/88	MIDWEST RUBBER
Phenolics	4.400 mg/l	04/12/89	MONSANTO
Phenolics	4.400 mg/l	04/12/89	MONSANTO
Phenolics	0.200 mg/l	03/15/89	MONSANTO
Phenolics	1.200 mg/l	02/15/89	MONSANTO
Phenolics	1.000 mg/l	01/18/89	MONSANTO
Phenolics	0.744 mg/l	12/07/88	MONSANTO
Phenolics	0.960 mg/l	12/14/88	MONSANTO
Phenolics	0.773 mg/l	12/19/88	MONSANTO
Phenolics	0.128 mg/l	12/27/88	MONSANTO
Phenolics	2.500 mg/l	12/14/88	MONSANTO
Phenolics	0.920 mg/l	11/09/88	MONSANTO
Phenolics	1.050 mg/l	10/06/88	MONSANTO
Phenolics	0.740 mg/l	10/13/88	MONSANTO
Phenolics	0.830 mg/l	10/18/88	MONSANTO
Phenolics	0.876 mg/l	10/26/88	MONSANTO
Phenolics	1.000 mg/l	10/12/88	MONSANTO
Phenolics	1.800 mg/l	09/14/88	MONSANTO
Phenolics	0.956 mg/l	08/15/88	MONSANTO
Phenolics	1.910 mg/l	08/23/88	MONSANTO
Phenolics	1.960 mg/l	08/29/88	MONSANTO
Phenolics	0.840 mg/l	09/06/88	MONSANTO
Phenolics	1.000 mg/l	08/10/88	MONSANTO
Phenolics	2.100 mg/l	07/13/88	MONSANTO
Phenolics	0.751 mg/l	07/27/88	MONSANTO
Phenolics	0.595 mg/l	07/31/88	MONSANTO
Phenolics	0.636 mg/l	08/02/88	MONSANTO
Phenolics	0.354 mg/l	08/06/88	MONSANTO
Phenolics	0.430 mg/l	08/10/88	MONSANTO
Phenolics	1.136 mg/l	08/14/88	MONSANTO
Phenolics	0.674 mg/l	08/16/88	MONSANTO
Phenolics	0.947 mg/l	08/20/88	MONSANTO
Phenolics	0.015 mg/l	04/18/89	MUSICK
Phenolics	0.008 mg/l	03/21/89	MUSICK
Phenolics	0.012 mg/l	01/04/89	MUSICK
Phenolics	0.007 mg/l	12/21/88	MUSICK
Phenolics	0.011 mg/l	04/19/89	PFIZER-SE
Phenolics	0.024 mg/l	03/21/89	PFIZER-SE
Phenolics	0.016 mg/l	02/27/89	PFIZER-SE

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APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Phenolics	0.012 mg/l	04/19/89	PFIZER-SW
Phenolics	0.013 mg/l	03/21/89	PFIZER-SW
Phenolics	0.000 mg/l	02/27/89	PFIZER-SW
Phenolics	0.580 mg/l	04/12/89	ROGERS CARTAGE
Phenolics	0.650 mg/l	03/15/89	ROGERS CARTAGE
Phenolics	0.092 mg/l	07/27/88	ROGERS CARTAGE
Phenolics	0.056 mg/l	07/31/88	ROGERS CARTAGE
Phenolics	0.127 mg/l	08/02/88	ROGERS CARTAGE
Phenolics	0.029 mg/l	08/06/88	ROGERS CARTAGE
Phenolics	0.055 mg/l	08/10/88	ROGERS CARTAGE
Phenolics	0.045 mg/l	08/14/88	ROGERS CARTAGE
Phenolics	0.706 mg/l	08/16/88	ROGERS CARTAGE
Phenolics	0.085 mg/l	08/20/88	ROGERS CARTAGE
Phenolics	0.546 mg/l	04/04/89	ROGERS CARTAGE
Phenolics	0.114 mg/l	04/05/89	ROGERS CARTAGE
Phenolics	1.293 mg/l	04/06/89	ROGERS CARTAGE
Phenolics	0.344 mg/l	04/07/89	ROGERS CARTAGE
Phenolics	0.302 mg/l	04/08/89	ROGERS CARTAGE
Phenolics	0.086 mg/l	04/10/89	ROGERS CARTAGE
Phenolics	0.168 mg/l	04/12/89	ROGERS CARTAGE
Phenolics	0.168 mg/l	04/13/89	ROGERS CARTAGE
Phenolics	0.201 mg/l	04/14/89	ROGERS CARTAGE
Phenolics	0.029 mg/l	04/16/89	ROGERS CARTAGE
Phenolics	0.346 mg/l	04/17/89	ROGERS CARTAGE
Phenolics	0.346 mg/l	04/18/89	ROGERS CARTAGE
Phenolics	0.849 mg/l	04/19/89	ROGERS CARTAGE
Phenolics	0.571 mg/l	04/20/89	ROGERS CARTAGE
Phenolics	3.337 mg/l	04/21/89	ROGERS CARTAGE
Phenolics	1.842 mg/l	04/22/89	ROGERS CARTAGE
Phenolics	2.006 mg/l	04/24/89	ROGERS CARTAGE
Phenolics	0.692 mg/l	04/25/89	ROGERS CARTAGE
Phenolics	0.565 mg/l	04/26/89	ROGERS CARTAGE
Phenolics	1.015 mg/l	04/27/89	ROGERS CARTAGE
Phenolics	0.036 mg/l	04/12/89	TRADE WASTE
Phenolics	0.000 mg/l	03/15/89	TRADE WASTE
Phenolics	0.006 mg/l	07/27/88	TRADE WASTE
Phenolics	0.000 mg/l	07/31/88	TRADE WASTE
Phenolics	0.003 mg/l	08/02/88	TRADE WASTE
Phenolics	0.014 mg/l	08/06/88	TRADE WASTE
Phenolics	0.019 mg/l	08/10/88	TRADE WASTE
Phenolics	0.008 mg/l	08/14/88	TRADE WASTE
Phenolics	0.017 mg/l	08/16/88	TRADE WASTE
Phenolics	0.017 mg/l	08/20/88	TRADE WASTE
Phenyl-Bicyclohexyl	560. ug/l	10/12/88	MONSANTO
Phenyl-Bicyclohexyl	360. ug/l	10/12/88	MONSANTO
Pyrene	2. ug/l	03/15/89	CLAYTON
Pyrene	10. ug/l	03/15/89	ROGERS CARTAGE
Selenium	0.000 mg/l	04/12/89	BIG RIVER ZINC
Selenium	0.000 mg/l	03/15/89	BIG RIVER ZINC
Selenium	0.000 mg/l	02/21/89	BIG RIVER ZINC
Selenium	1.300 mg/l	04/12/89	CERRO-EAST
Selenium	0.030 mg/l	03/15/89	CERRO-EAST
Selenium	0.000 mg/l	02/22/89	CERRO-EAST
Selenium	0.100 mg/l	08/12/88	CERRO-EAST
Selenium	0.100 mg/l	08/19/88	CERRO-EAST

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APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Selenium	0.005 mg/l	08/24/88	CERRO-EAST
Selenium	0.000 mg/l	04/12/89	CERRO-WEST
Selenium	0.000 mg/l	03/15/89	CERRO-WEST
Selenium	0.062 mg/l	02/22/89	CERRO-WEST
Selenium	0.220 mg/l	08/12/88	CERRO-WEST
Selenium	0.100 mg/l	08/19/88	CERRO-WEST
Selenium	0.025 mg/l	08/24/88	CERRO-WEST
Selenium	0.000 mg/l	04/12/89	CLAYTON
Selenium	0.000 mg/l	03/15/89	CLAYTON
Selenium	0.000 mg/l	04/12/89	ETHYL
Selenium	0.000 mg/l	03/15/89	ETHYL
Selenium	0.005 mg/l	07/07/88	ETHYL
Selenium	0.009 mg/l	07/13/88	ETHYL
Selenium	0.005 mg/l	07/21/88	ETHYL
Selenium	0.005 mg/l	10/06/88	ETHYL
Selenium	0.005 mg/l	10/13/88	ETHYL
Selenium	0.005 mg/l	10/20/88	ETHYL
Selenium	0.005 mg/l	12/09/88	ETHYL
Selenium	0.005 mg/l	12/15/88	ETHYL
Selenium	0.005 mg/l	12/22/88	ETHYL
Selenium	0.000 mg/l	04/18/89	LANCHEM
Selenium	0.012 mg/l	03/21/89	LANCHEM
Selenium	0.010 mg/l	01/26/89	LANCHEM
Selenium	0.010 mg/l	11/01/88	LANCHEM
Selenium	0.012 mg/l	04/12/89	MIDWEST RUBBER
Selenium	0.000 mg/l	03/15/89	MIDWEST RUBBER
Selenium	0.004 mg/l	10/04/88	MIDWEST RUBBER
Selenium	0.000 mg/l	02/21/89	MIDWEST RUBBER
Selenium	0.000 mg/l	04/12/89	MONSANTO
Selenium	0.000 mg/l	03/15/89	MONSANTO
Selenium	0.000 mg/l	02/15/89	MONSANTO
Selenium	0.000 mg/l	01/18/89	MONSANTO
Selenium	0.007 mg/l	12/14/88	MONSANTO
Selenium	0.006 mg/l	12/19/88	MONSANTO
Selenium	0.016 mg/l	12/27/88	MONSANTO
Selenium	0.000 mg/l	12/14/88	MONSANTO
Selenium	0.000 mg/l	11/09/88	MONSANTO
Selenium	0.026 mg/l	10/06/88	MONSANTO
Selenium	0.026 mg/l	10/13/88	MONSANTO
Selenium	0.021 mg/l	10/18/88	MONSANTO
Selenium	0.000 mg/l	10/12/88	MONSANTO
Selenium	0.000 mg/l	09/14/88	MONSANTO
Selenium	0.000 mg/l	08/10/88	MONSANTO
Selenium	0.000 mg/l	07/13/88	MONSANTO
Selenium	0.000 mg/l	04/18/89	MUSICK
Selenium	0.000 mg/l	03/21/89	MUSICK
Selenium	0.002 mg/l	01/04/89	MUSICK
Selenium	0.002 mg/l	11/21/88	MUSICK
Selenium	0.000 mg/l	04/19/89	PFIZER-SE
Selenium	0.000 mg/l	03/21/89	PFIZER-SE
Selenium	0.000 mg/l	02/27/89	PFIZER-SE
Selenium	0.002 mg/l	12/09/88	PFIZER-SE
Selenium	0.002 mg/l	12/15/88	PFIZER-SE
Selenium	0.003 mg/l	12/20/88	PFIZER-SE
Selenium	0.002 mg/l	10/03/88	PFIZER-SE

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Selenium	0.006 mg/l	10/12/88	PFIZER-SE
Selenium	0.007 mg/l	10/19/88	PFIZER-SE
Selenium	0.005 mg/l	10/27/88	PFIZER-SE
Selenium	0.002 mg/l	07/05/88	PFIZER-SE
Selenium	0.002 mg/l	07/12/88	PFIZER-SE
Selenium	0.002 mg/l	07/21/88	PFIZER-SE
Selenium	0.002 mg/l	07/27/88	PFIZER-SE
Selenium	0.000 mg/l	04/19/89	PFIZER-SW
Selenium	0.000 mg/l	03/21/89	PFIZER-SW
Selenium	0.000 mg/l	02/27/89	PFIZER-SW
Selenium	0.002 mg/l	12/09/88	PFIZER-SW
Selenium	0.002 mg/l	12/15/88	PFIZER-SW
Selenium	0.002 mg/l	12/20/88	PFIZER-SW
Selenium	0.002 mg/l	10/03/88	PFIZER-SW
Selenium	0.002 mg/l	10/12/88	PFIZER-SW
Selenium	0.003 mg/l	10/19/88	PFIZER-SW
Selenium	0.002 mg/l	10/27/88	PFIZER-SW
Selenium	0.002 mg/l	07/05/88	PFIZER-SW
Selenium	0.002 mg/l	07/12/88	PFIZER-SW
Selenium	0.002 mg/l	07/21/88	PFIZER-SW
Selenium	0.000 mg/l	04/12/89	ROGERS CARTAGE
Selenium	0.000 mg/l	03/15/89	ROGERS CARTAGE
Selenium	0.000 mg/l	04/12/89	TRADE WASTE
Selenium	0.000 mg/l	03/15/89	TRADE WASTE
Silver	0.000 mg/l	04/12/89	BIG RIVER ZINC
Silver	0.000 mg/l	03/15/89	BIG RIVER ZINC
Silver	0.000 mg/l	02/21/89	BIG RIVER ZINC
Silver	0.910 mg/l	04/12/89	CERRO-EAST
Silver	0.310 mg/l	03/15/89	CERRO-EAST
Silver	0.700 mg/l	02/22/89	CERRO-EAST
Silver	0.050 mg/l	08/12/88	CERRO-EAST
Silver	0.000 mg/l	04/12/89	CERRO-WEST
Silver	0.000 mg/l	03/15/89	CERRO-WEST
Silver	0.000 mg/l	02/22/89	CERRO-WEST
Silver	0.050 mg/l	08/12/88	CERRO-WEST
Silver	0.050 mg/l	08/19/88	CERRO-WEST
Silver	0.007 mg/l	08/24/88	CERRO-WEST
Silver	0.000 mg/l	04/12/89	CLAYTON
Silver	0.000 mg/l	03/15/89	CLAYTON
Silver	0.000 mg/l	04/12/89	ETHYL
Silver	0.010 mg/l	03/15/89	ETHYL
Silver	0.000 mg/l	04/18/89	LANCHEM
Silver	0.000 mg/l	03/21/89	LANCHEM
Silver	0.010 mg/l	01/26/89	LANCHEM
Silver	0.010 mg/l	11/01/88	LANCHEM
Silver	0.000 mg/l	04/12/89	MIDWEST RUBBER
Silver	0.000 mg/l	03/15/89	MIDWEST RUBBER
Silver	0.000 mg/l	02/21/89	MIDWEST RUBBER
Silver	0.000 mg/l	04/12/89	MONSANTO
Silver	0.000 mg/l	02/15/89	MONSANTO
Silver	0.101 mg/l	01/18/89	MONSANTO
Silver	0.006 mg/l	12/14/88	MONSANTO

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APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Silver	0.015 mg/l	12/19/88	MONSANTO
Silver	0.023 mg/l	12/27/88	MONSANTO
Silver	0.000 mg/l	12/14/88	MONSANTO
Silver	0.000 mg/l	11/09/88	MONSANTO
Silver	0.000 mg/l	10/12/88	MONSANTO
Silver	0.000 mg/l	09/14/88	MONSANTO
Silver	0.000 mg/l	08/10/88	MONSANTO
Silver	0.000 mg/l	07/13/88	MONSANTO
Silver	0.000 mg/l	04/18/89	MUSICK
Silver	0.000 mg/l	03/21/89	MUSICK
Silver	0.010 mg/l	11/07/88	MUSICK
Silver	0.010 mg/l	12/05/88	MUSICK
Silver	0.010 mg/l	01/09/89	MUSICK
Silver	0.010 mg/l	02/13/89	MUSICK
Silver	0.000 mg/l	04/19/89	PFIZER-SE
Silver	0.000 mg/l	03/21/89	PFIZER-SE
Silver	0.000 mg/l	02/27/89	PFIZER-SE
Silver	0.018 mg/l	12/09/88	PFIZER-SE
Silver	0.012 mg/l	12/15/88	PFIZER-SE
Silver	0.012 mg/l	12/20/88	PFIZER-SE
Silver	0.002 mg/l	10/03/88	PFIZER-SE
Silver	0.002 mg/l	10/12/88	PFIZER-SE
Silver	0.011 mg/l	07/05/88	PFIZER-SE
Silver	0.010 mg/l	07/12/88	PFIZER-SE
Silver	0.013 mg/l	07/21/88	PFIZER-SE
Silver	0.012 mg/l	07/27/88	PFIZER-SE
Silver	0.000 mg/l	04/19/89	PFIZER-SW
Silver	0.000 mg/l	03/21/89	PFIZER-SW
Silver	0.000 mg/l	02/27/89	PFIZER-SW
Silver	0.002 mg/l	12/09/88	PFIZER-SW
Silver	0.002 mg/l	12/15/88	PFIZER-SW
Silver	0.002 mg/l	12/20/88	PFIZER-SW
Silver	0.002 mg/l	10/03/88	PFIZER-SW
Silver	0.002 mg/l	10/12/88	PFIZER-SW
Silver	0.002 mg/l	10/19/88	PFIZER-SW
Silver	0.000 mg/l	04/12/89	ROGERS CARTAGE
Silver	0.000 mg/l	03/15/89	ROGERS CARTAGE
Silver	0.000 mg/l	04/12/89	TRADE WASTE
Silver	0.000 mg/l	03/15/89	TRADE WASTE
Sulfate (avg)(1)	3714.000 mg/l	03/88	PFIZER-SE
Sulfate (avg)(1)	4428.000 mg/l	02/88	PFIZER-SE
Sulfates	3180.000 mg/l	04/12/89	BIG RIVER ZINC
Sulfates	2370.000 mg/l	03/15/89	BIG RIVER ZINC
Sulfates	317.000 mg/l	04/12/89	CERRO-EAST
Sulfates	488.000 mg/l	03/15/89	CERRO-EAST
Sulfates	58.900 mg/l	04/12/89	CERRO-WEST
Sulfates	173.000 mg/l	03/15/89	CERRO-WEST
Sulfates	62.600 mg/l	04/12/89	CLAYTON
Sulfates	120.000 mg/l	03/15/89	CLAYTON
Sulfates	109.000 mg/l	04/12/89	ETHYL
Sulfates	66.200 mg/l	03/15/89	ETHYL

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Sulfates	116.000 mg/l	04/12/89	MIDWEST RUBBER
Sulfates	111.000 mg/l	03/15/89	MIDWEST RUBBER
Sulfates	1350.000 mg/l	04/12/89	MONSANTO
Sulfates	1350.000 mg/l	04/12/89	MONSANTO
Sulfates	1670.000 mg/l	03/15/89	MONSANTO
Sulfates	1600.000 mg/l	02/15/89	MONSANTO
Sulfates	1400.000 mg/l	01/18/89	MONSANTO
Sulfates	1300.000 mg/l	12/14/88	MONSANTO
Sulfates	720.000 mg/l	11/09/88	MONSANTO
Sulfates	1200.000 mg/l	10/12/88	MONSANTO
Sulfates	590.000 mg/l	09/14/88	MONSANTO
Sulfates	1100.000 mg/l	08/10/88	MONSANTO
Sulfates	640.000 mg/l	07/13/88	MONSANTO
Sulfates	0.000 mg/l	04/12/89	ROGERS CARTAGE
Sulfates	131.000 mg/l	03/15/89	ROGERS CARTAGE
Sulfates	1180.000 mg/l	04/12/89	TRADE WASTE
Sulfates	546.000 mg/l	03/15/89	TRADE WASTE
TDS	4500.000 mg/l	04/12/89	BIG RIVER ZINC
TDS	4000.000 mg/l	03/15/89	BIG RIVER ZINC
TDS	830.000 mg/l	04/12/89	CERRO-EAST
TDS	1500.000 mg/l	03/15/89	CERRO-EAST
TDS	380.000 mg/l	04/12/89	CERRO-WEST
TDS	590.000 mg/l	03/15/89	CERRO-WEST
TDS	930.000 mg/l	04/12/89	CLAYTON
TDS	1400.000 mg/l	03/15/89	CLAYTON
TDS	4900.000 mg/l	04/12/89	ETHYL
TDS	7100.000 mg/l	03/15/89	ETHYL
TDS	560.000 mg/l	04/12/89	MIDWEST RUBBER
TDS	770.000 mg/l	03/15/89	MIDWEST RUBBER
TDS	5400.000 mg/l	04/12/89	MONSANTO
TDS	5400.000 mg/l	04/12/89	MONSANTO
TDS	7100.000 mg/l	03/15/89	MONSANTO
TDS	8100.000 mg/l	02/15/89	MONSANTO
TDS	4900.000 mg/l	01/18/89	MONSANTO
TDS	5300.000 mg/l	12/14/88	MONSANTO
TDS	1900.000 mg/l	11/09/88	MONSANTO
TDS	3300.000 mg/l	10/12/88	MONSANTO
TDS	3800.000 mg/l	09/14/88	MONSANTO
TDS	3700.000 mg/l	08/10/88	MONSANTO
TDS	3600.000 mg/l	07/13/88	MONSANTO
TDS	890.000 mg/l	04/12/89	ROGERS CARTAGE
TDS	1100.000 mg/l	03/15/89	ROGERS CARTAGE
TDS	5600.000 mg/l	04/12/89	TRADE WASTE
TDS	3900.000 mg/l	03/15/89	TRADE WASTE
TOC	8.000 mg/l	04/12/89	BIG RIVER ZINC
TOC	11.000 mg/l	03/15/89	BIG RIVER ZINC
TOC	8.000 mg/l	02/21/89	BIG RIVER ZINC
TOC	17.700 mg/l	07/27/88	BIG RIVER ZINC
TOC	12.300 mg/l	07/31/88	BIG RIVER ZINC
TOC	12.300 mg/l	08/02/88	BIG RIVER ZINC

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
TOC	12.000 mg/l	08/06/88	BIG RIVER ZINC
TOC	9.300 mg/l	08/10/88	BIG RIVER ZINC
TOC	12.800 mg/l	08/14/88	BIG RIVER ZINC
TOC	25.600 mg/l	08/16/88	BIG RIVER ZINC
TOC	37.200 mg/l	08/20/88	BIG RIVER ZINC
TOC	45.000 mg/l	04/12/89	CERRO-EAST
TOC	43.500 mg/l	03/15/89	CERRO-EAST
TOC	18.000 mg/l	02/22/89	CERRO-EAST
TOC	101.200 mg/l	07/27/88	CERRO-EAST
TOC	67.800 mg/l	07/31/88	CERRO-EAST
TOC	98.600 mg/l	08/02/88	CERRO-EAST
TOC	209.600 mg/l	08/06/88	CERRO-EAST
TOC	198.700 mg/l	08/10/88	CERRO-EAST
TOC	110.900 mg/l	08/14/88	CERRO-EAST
TOC	274.100 mg/l	08/16/88	CERRO-EAST
TOC	82.200 mg/l	08/20/88	CERRO-EAST
TOC	12.000 mg/l	04/12/89	CERRO-WEST
TOC	13.700 mg/l	03/15/89	CERRO-WEST
TOC	58.500 mg/l	02/22/89	CERRO-WEST
TOC	27.800 mg/l	07/27/88	CERRO-WEST
TOC	9.800 mg/l	07/31/88	CERRO-WEST
TOC	55.800 mg/l	08/02/88	CERRO-WEST
TOC	19.200 mg/l	08/06/88	CERRO-WEST
TOC	41.600 mg/l	08/10/88	CERRO-WEST
TOC	18.700 mg/l	08/14/88	CERRO-WEST
TOC	36.200 mg/l	08/16/88	CERRO-WEST
TOC	42.000 mg/l	08/20/88	CERRO-WEST
TOC	252.000 mg/l	04/12/89	CLAYTON
TOC	222.000 mg/l	03/15/89	CLAYTON
TOC	76.200 mg/l	07/27/88	CLAYTON
TOC	11.800 mg/l	07/31/88	CLAYTON
TOC	154.700 mg/l	08/02/88	CLAYTON
TOC	32.000 mg/l	08/06/88	CLAYTON
TOC	535.600 mg/l	08/10/88	CLAYTON
TOC	34.000 mg/l	08/14/88	CLAYTON
TOC	346.600 mg/l	08/16/88	CLAYTON
TOC	308.800 mg/l	08/20/88	CLAYTON
TOC	301.000 mg/l	02/01/89	CLAYTON
TOC	623.000 mg/l	02/03/89	CLAYTON
TOC	383.000 mg/l	02/07/89	CLAYTON
TOC	171.000 mg/l	02/09/89	CLAYTON
TOC	421.000 mg/l	02/10/89	CLAYTON
TOC	266.000 mg/l	02/11/89	CLAYTON
TOC	581.000 mg/l	02/15/89	CLAYTON
TOC	91.000 mg/l	02/16/89	CLAYTON
TOC	2130.000 S.U.	02/17/89	CLAYTON
TOC	1215.000 S.U.	02/18/89	CLAYTON
TOC	561.000 S.U.	02/19/89	CLAYTON
TOC	186.000 S.U.	02/20/89	CLAYTON
TOC	216.000 S.U.	02/21/89	CLAYTON
TOC	56.000 S.U.	02/22/89	CLAYTON
TOC	132.000 S.U.	02/23/89	CLAYTON
TOC	186.000 S.U.	02/24/89	CLAYTON
TOC	361.000 mg/l	02/25/89	CLAYTON
TOC	208.000 mg/l	02/26/89	CLAYTON
TOC	105.000 mg/l	02/27/89	CLAYTON
TOC	110.000 mg/l	02/28/89	CLAYTON
TOC	50.000 mg/l	03/01/89	CLAYTON
TOC	46.000 mg/l	03/02/89	CLAYTON
TOC	99.000 mg/l	03/03/89	CLAYTON

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
TOC	102.000 mg/l	03/04/89	CLAYTON
TOC	50.000 mg/l	03/05/89	CLAYTON
TOC	53.000 mg/l	03/06/89	CLAYTON
TOC	90.000 mg/l	03/07/89	CLAYTON
TOC	337.000 mg/l	03/08/89	CLAYTON
TOC	507.000 mg/l	04/12/89	ETHYL
TOC	394.000 mg/l	02/01/89	ETHYL
TOC	378.000 mg/l	02/03/89	ETHYL
TOC	393.000 mg/l	02/07/89	ETHYL
TOC	833.000 mg/l	02/09/89	ETHYL
TOC	584.000 mg/l	02/10/89	ETHYL
TOC	468.000 mg/l	02/11/89	ETHYL
TOC	384.000 mg/l	02/15/89	ETHYL
TOC	549.000 mg/l	02/16/89	ETHYL
TOC	639.000 S.U.	02/17/89	ETHYL
TOC	796.000 S.U.	02/18/89	ETHYL
TOC	545.000 S.U.	02/19/89	ETHYL
TOC	549.000 S.U.	02/20/89	ETHYL
TOC	501.000 S.U.	02/21/89	ETHYL
TOC	510.000 S.U.	02/22/89	ETHYL
TOC	550.000 S.U.	02/23/89	ETHYL
TOC	448.000 S.U.	02/24/89	ETHYL
TOC	573.000 mg/l	02/25/89	ETHYL
TOC	604.000 mg/l	02/26/89	ETHYL
TOC	526.000 mg/l	02/27/89	ETHYL
TOC	533.000 mg/l	02/28/89	ETHYL
TOC	414.000 mg/l	03/01/89	ETHYL
TOC	645.000 mg/l	03/02/89	ETHYL
TOC	640.000 mg/l	03/03/89	ETHYL
TOC	614.000 mg/l	03/04/89	ETHYL
TOC	654.000 mg/l	03/05/89	ETHYL
TOC	793.000 mg/l	03/06/89	ETHYL
TOC	462.000 mg/l	03/07/89	ETHYL
TOC	312.000 mg/l	03/08/89	ETHYL
TOC	612.500 mg/l	03/15/89	ETHYL
TOC	32.200 mg/l	07/27/88	ETHYL
TOC	102.600 mg/l	07/31/88	ETHYL
TOC	157.900 mg/l	08/02/88	ETHYL
TOC	397.300 mg/l	08/06/88	ETHYL
TOC	911.300 mg/l	08/10/88	ETHYL
TOC	489.200 mg/l	08/14/88	ETHYL
TOC	291.300 mg/l	08/16/88	ETHYL
TOC	299.900 mg/l	08/20/88	ETHYL
TOC	540.000 mg/l	04/18/89	LANCHEM
TOC	167.000 mg/l	03/21/89	LANCHEM
TOC	218.500 mg/l	04/12/89	MIDWEST RUBBER
TOC	215.000 mg/l	02/01/89	MIDWEST RUBBER
TOC	345.000 mg/l	02/03/89	MIDWEST RUBBER
TOC	112.000 mg/l	02/07/89	MIDWEST RUBBER
TOC	176.000 mg/l	02/09/89	MIDWEST RUBBER
TOC	216.000 mg/l	02/10/89	MIDWEST RUBBER
TOC	80.000 mg/l	02/11/89	MIDWEST RUBBER
TOC	95.000 mg/l	02/15/89	MIDWEST RUBBER
TOC	228.000 mg/l	02/16/89	MIDWEST RUBBER
TOC	276.000 S.U.	02/17/89	MIDWEST RUBBER
TOC	110.000 S.U.	02/18/89	MIDWEST RUBBER
TOC	91.000 S.U.	02/19/89	MIDWEST RUBBER
TOC	217.000 S.U.	02/20/89	MIDWEST RUBBER
TOC	237.000 S.U.	02/21/89	MIDWEST RUBBER
TOC	269.000 S.U.	02/22/89	MIDWEST RUBBER

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
TOC	247.000 S.U.	02/23/89	MIDWEST RUBBER
TOC	101.000 S.U.	02/24/89	MIDWEST RUBBER
TOC	55.000 mg/l	02/25/89	MIDWEST RUBBER
TOC	67.000 mg/l	02/26/89	MIDWEST RUBBER
TOC	190.000 mg/l	02/27/89	MIDWEST RUBBER
TOC	270.000 mg/l	02/28/89	MIDWEST RUBBER
TOC	181.000 mg/l	03/01/89	MIDWEST RUBBER
TOC	215.000 mg/l	03/02/89	MIDWEST RUBBER
TOC	79.000 mg/l	03/03/89	MIDWEST RUBBER
TOC	93.000 mg/l	03/04/89	MIDWEST RUBBER
TOC	46.000 mg/l	03/05/89	MIDWEST RUBBER
TOC	94.000 mg/l	03/06/89	MIDWEST RUBBER
TOC	118.000 mg/l	03/07/89	MIDWEST RUBBER
TOC	117.000 mg/l	03/08/89	MIDWEST RUBBER
TOC	367.500 mg/l	03/15/89	MIDWEST RUBBER
TOC	305.000 mg/l	02/21/89	MIDWEST RUBBER
TOC	103.100 mg/l	07/27/88	MIDWEST RUBBER
TOC	34.400 mg/l	07/31/88	MIDWEST RUBBER
TOC	83.800 mg/l	08/02/88	MIDWEST RUBBER
TOC	84.600 mg/l	08/06/88	MIDWEST RUBBER
TOC	95.800 mg/l	08/10/88	MIDWEST RUBBER
TOC	44.600 mg/l	08/14/88	MIDWEST RUBBER
TOC	183.900 mg/l	08/16/88	MIDWEST RUBBER
TOC	117.400 mg/l	08/20/88	MIDWEST RUBBER
TOC	160.000 mg/l	04/12/89	MONSANTO
TOC	358.000 mg/l	02/01/89	MONSANTO
TOC	291.000 mg/l	02/03/89	MONSANTO
TOC	316.000 mg/l	02/07/89	MONSANTO
TOC	287.000 mg/l	02/09/89	MONSANTO
TOC	302.000 mg/l	02/10/89	MONSANTO
TOC	323.000 mg/l	02/11/89	MONSANTO
TOC	255.000 mg/l	02/15/89	MONSANTO
TOC	299.000 mg/l	02/16/89	MONSANTO
TOC	256.000 S.U.	02/17/89	MONSANTO
TOC	257.000 S.U.	02/18/89	MONSANTO
TOC	305.000 S.U.	02/19/89	MONSANTO
TOC	297.000 S.U.	02/20/89	MONSANTO
TOC	316.000 S.U.	02/21/89	MONSANTO
TOC	355.000 S.U.	02/22/89	MONSANTO
TOC	311.000 S.U.	02/23/89	MONSANTO
TOC	309.000 S.U.	02/24/89	MONSANTO
TOC	339.000 mg/l	02/25/89	MONSANTO
TOC	279.000 mg/l	02/26/89	MONSANTO
TOC	285.000 mg/l	02/27/89	MONSANTO
TOC	278.000 mg/l	02/28/89	MONSANTO
TOC	299.000 mg/l	03/01/89	MONSANTO
TOC	352.000 mg/l	03/02/89	MONSANTO
TOC	336.000 mg/l	03/03/89	MONSANTO
TOC	347.000 mg/l	03/04/89	MONSANTO
TOC	335.000 mg/l	03/05/89	MONSANTO
TOC	257.000 mg/l	03/06/89	MONSANTO
TOC	229.000 mg/l	03/07/89	MONSANTO
TOC	332.000 mg/l	03/08/89	MONSANTO
TOC	182.000 mg/l	03/15/89	MONSANTO
TOC	210.000 mg/l	02/15/89	MONSANTO
TOC	225.000 mg/l	01/18/89	MONSANTO
TOC	295.000 mg/l	12/14/88	MONSANTO
TOC	125.000 mg/l	11/09/88	MONSANTO
TOC	125.000 mg/l	10/12/88	MONSANTO
TOC	79.000 mg/l	09/14/88	MONSANTO
TOC	58.500 mg/l	08/10/88	MONSANTO
TOC	180.000 mg/l	07/13/88	MONSANTO

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
TOC	160.700 mg/l	07/27/88	MONSANTO
TOC	166.600 mg/l	07/31/88	MONSANTO
TOC	136.300 mg/l	08/02/88	MONSANTO
TOC	153.100 mg/l	08/06/88	MONSANTO
TOC	168.100 mg/l	08/10/88	MONSANTO
TOC	301.700 mg/l	08/14/88	MONSANTO
TOC	181.900 mg/l	08/16/88	MONSANTO
TOC	173.600 mg/l	08/20/88	MONSANTO
TOC	111.500 mg/l	04/18/89	MUSICK
TOC	34.000 mg/l	03/21/89	MUSICK
TOC	6.600 mg/l	04/19/89	PFIZER-SE
TOC	8.800 mg/l	03/21/89	PFIZER-SE
TOC	8.400 mg/l	02/27/89	PFIZER-SE
TOC	13.300 mg/l	04/19/89	PFIZER-SW
TOC	8.100 mg/l	03/21/89	PFIZER-SW
TOC	9.500 mg/l	02/27/89	PFIZER-SW
TOC	775.000 mg/l	04/12/89	ROGERS CARTAGE
TOC	206.000 mg/l	02/01/89	ROGERS CARTAGE
TOC	388.000 mg/l	02/03/89	ROGERS CARTAGE
TOC	871.000 mg/l	02/07/89	ROGERS CARTAGE
TOC	111.000 mg/l	02/09/89	ROGERS CARTAGE
TOC	99.000 mg/l	02/10/89	ROGERS CARTAGE
TOC	42.000 mg/l	02/11/89	ROGERS CARTAGE
TOC	82.000 mg/l	02/15/89	ROGERS CARTAGE
TOC	141.000 S.U.	02/17/89	ROGERS CARTAGE
TOC	48.000 S.U.	02/18/89	ROGERS CARTAGE
TOC	57.000 S.U.	02/19/89	ROGERS CARTAGE
TOC	195.000 S.U.	02/20/89	ROGERS CARTAGE
TOC	124.000 S.U.	02/21/89	ROGERS CARTAGE
TOC	675.000 S.U.	02/22/89	ROGERS CARTAGE
TOC	221.000 S.U.	02/23/89	ROGERS CARTAGE
TOC	104.000 S.U.	02/24/89	ROGERS CARTAGE
TOC	61.000 mg/l	02/25/89	ROGERS CARTAGE
TOC	196.000 mg/l	02/26/89	ROGERS CARTAGE
TOC	363.000 mg/l	02/27/89	ROGERS CARTAGE
TOC	262.000 mg/l	02/28/89	ROGERS CARTAGE
TOC	349.000 mg/l	03/01/89	ROGERS CARTAGE
TOC	198.000 mg/l	03/02/89	ROGERS CARTAGE
TOC	58.000 mg/l	03/03/89	ROGERS CARTAGE
TOC	67.000 mg/l	03/04/89	ROGERS CARTAGE
TOC	98.000 mg/l	03/05/89	ROGERS CARTAGE
TOC	427.000 mg/l	03/06/89	ROGERS CARTAGE
TOC	422.000 mg/l	03/07/89	ROGERS CARTAGE
TOC	478.000 mg/l	03/08/89	ROGERS CARTAGE
TOC	103.000 mg/l	03/15/89	ROGERS CARTAGE
TOC	500.700 mg/l	07/27/88	ROGERS CARTAGE
TOC	101.900 mg/l	07/31/88	ROGERS CARTAGE
TOC	422.400 mg/l	08/02/88	ROGERS CARTAGE
TOC	80.000 mg/l	08/06/88	ROGERS CARTAGE
TOC	120.800 mg/l	08/10/88	ROGERS CARTAGE
TOC	38.700 mg/l	08/14/88	ROGERS CARTAGE
TOC	596.300 mg/l	08/16/88	ROGERS CARTAGE
TOC	124.400 mg/l	08/20/88	ROGERS CARTAGE
TOC	88.000 mg/l	04/01/89	ROGERS CARTAGE
TOC	201.000 mg/l	04/04/89	ROGERS CARTAGE
TOC	254.000 mg/l	04/05/89	ROGERS CARTAGE
TOC	1348.000 mg/l	04/06/89	ROGERS CARTAGE
TOC	1078.000 mg/l	04/07/89	ROGERS CARTAGE
TOC	129.000 mg/l	04/08/89	ROGERS CARTAGE

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
TOC	329.000 mg/l	04/10/89	ROGERS CARTAGE
TOC	1414.000 mg/l	04/12/89	ROGERS CARTAGE
TOC	423.000 mg/l	04/13/89	ROGERS CARTAGE
TOC	173.000 mg/l	05/14/89	ROGERS CARTAGE
TOC	447.000 mg/l	05/15/89	ROGERS CARTAGE
TOC	23.700 mg/l	04/12/89	TRADE WASTE
TOC	17.800 mg/l	03/15/89	TRADE WASTE
TOC	31.200 mg/l	07/27/88	TRADE WASTE
TOC	19.800 mg/l	07/31/88	TRADE WASTE
TOC	16.700 mg/l	08/02/88	TRADE WASTE
TOC	28.100 mg/l	08/06/88	TRADE WASTE
TOC	35.100 mg/l	08/10/88	TRADE WASTE
TOC	23.000 mg/l	08/14/88	TRADE WASTE
TOC	25.400 mg/l	08/16/88	TRADE WASTE
TOC	29.900 mg/l	08/20/88	TRADE WASTE
TOC (avg)(1)	259.000 mg/l	04/89	CLAYTON
TOC (avg)(1)	415.000 mg/l	04/89	ETHYL
TOC (avg)(1)	182.000 mg/l	04/89	MIDWEST RUBBER
TOC (avg)(1)	316.000 mg/l	04/89	MONSANTO
TOC (avg)(1)	585.000 mg/l	04/89	ROGERS CARTAGE
TSS	36.000 mg/l	04/12/89	BIG RIVER ZINC
TSS	26.000 mg/l	03/15/89	BIG RIVER ZINC
TSS	21.000 mg/l	02/21/89	BIG RIVER ZINC
TSS	14.000 mg/l	12/08/88	BIG RIVER ZINC
TSS	39.000 mg/l	12/15/88	BIG RIVER ZINC
TSS	38.000 mg/l	12/22/88	BIG RIVER ZINC
TSS	82.000 mg/l	12/28/88	BIG RIVER ZINC
TSS	25.000 mg/l	10/06/88	BIG RIVER ZINC
TSS	24.000 mg/l	10/10/88	BIG RIVER ZINC
TSS	367.000 mg/l	10/20/88	BIG RIVER ZINC
TSS	9.000 mg/l	10/27/88	BIG RIVER ZINC
TSS	6.000 mg/l	08/04/88	BIG RIVER ZINC
TSS	22.000 mg/l	08/12/88	BIG RIVER ZINC
TSS	14.000 mg/l	08/19/88	BIG RIVER ZINC
TSS	16.000 mg/l	08/26/88	BIG RIVER ZINC
TSS	4200.000 mg/l	04/12/89	CERRO-EAST
TSS	440.000 mg/l	03/15/89	CERRO-EAST
TSS	440.000 mg/l	02/22/89	CERRO-EAST
TSS	121.000 mg/l	12/07/88	CERRO-EAST
TSS	128.000 mg/l	12/14/88	CERRO-EAST
TSS	102.000 mg/l	12/14/88	CERRO-EAST
TSS	960.000 mg/l	12/22/88	CERRO-EAST
TSS	196.000 mg/l	12/29/88	CERRO-EAST
TSS	396.000 mg/l	08/05/88	CERRO-EAST
TSS	71.000 mg/l	08/12/88	CERRO-EAST
TSS	300.000 mg/l	08/19/88	CERRO-EAST
TSS	290.000 mg/l	08/24/88	CERRO-EAST
TSS	160.000 mg/l	08/24/88	CERRO-EAST
TSS	8.400 mg/l	08/24/88	CERRO-EAST
TSS	77.000 mg/l	08/24/88	CERRO-EAST
TSS	78.000 mg/l	08/24/88	CERRO-EAST
TSS	70.000 mg/l	08/24/88	CERRO-EAST
TSS	354.000 mg/l	10/07/88	CERRO-EAST
TSS	590.000 mg/l	10/14/88	CERRO-EAST
TSS	684.000 mg/l	10/21/88	CERRO-EAST

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
TSS	270.000 mg/l	10/26/88	CERRO-EAST
TSS	12.000 mg/l	04/12/89	CERRO-WEST
TSS	16.000 mg/l	03/15/89	CERRO-WEST
TSS	76.000 mg/l	02/22/89	CERRO-WEST
TSS	126.000 mg/l	08/12/88	CERRO-WEST
TSS	47.000 mg/l	08/19/88	CERRO-WEST
TSS	3.200 mg/l	08/24/88	CERRO-WEST
TSS	350.000 mg/l	08/24/88	CERRO-WEST
TSS	57.000 mg/l	08/24/88	CERRO-WEST
TSS	68.000 mg/l	08/24/88	CERRO-WEST
TSS	32.000 mg/l	08/24/88	CERRO-WEST
TSS	19.000 mg/l	08/24/88	CERRO-WEST
TSS	23.000 mg/l	10/07/88	CERRO-WEST
TSS	20.000 mg/l	10/14/88	CERRO-WEST
TSS	812.000 mg/l	10/21/88	CERRO-WEST
TSS	25.000 mg/l	10/26/88	CERRO-WEST
TSS	91.000 mg/l	12/07/88	CERRO-WEST
TSS	71.000 mg/l	12/07/88	CERRO-WEST
TSS	80.000 mg/l	12/14/88	CERRO-WEST
TSS	59.000 mg/l	12/22/88	CERRO-WEST
TSS	136.000 mg/l	12/29/88	CERRO-WEST
TSS	270.000 mg/l	04/12/89	CLAYTON
TSS	120.000 mg/l	03/15/89	CLAYTON
TSS	70.000 mg/l	04/12/89	ETHYL
TSS	38.000 mg/l	03/15/89	ETHYL
TSS	17.000 mg/l	07/07/88	ETHYL
TSS	24.000 mg/l	07/13/88	ETHYL
TSS	14.000 mg/l	07/21/88	ETHYL
TSS	15.000 mg/l	07/28/88	ETHYL
TSS	20.000 mg/l	10/06/88	ETHYL
TSS	44.000 mg/l	10/13/88	ETHYL
TSS	116.000 mg/l	10/20/88	ETHYL
TSS	32.000 mg/l	10/27/88	ETHYL
TSS	20.000 mg/l	12/09/88	ETHYL
TSS	32.000 mg/l	12/15/88	ETHYL
TSS	160.000 mg/l	12/22/88	ETHYL
TSS	166.000 mg/l	12/29/88	ETHYL
TSS	360.000 mg/l	04/18/89	LANCHEM
TSS	220.000 mg/l	03/21/89	LANCHEM
TSS	205.000 mg/l	01/26/89	LANCHEM
TSS	1134.000 mg/l	11/01/88	LANCHEM
TSS	32.000 mg/l	04/12/89	MIDWEST RUBBER
TSS	150.000 mg/l	03/15/89	MIDWEST RUBBER
TSS	75.000 mg/l	08/08/88	MIDWEST RUBBER
TSS	17.000 mg/l	08/17/88	MIDWEST RUBBER
TSS	26.000 mg/l	08/24/88	MIDWEST RUBBER
TSS	16.000 mg/l	08/31/88	MIDWEST RUBBER
TSS	439.000 mg/l	10/04/88	MIDWEST RUBBER
TSS	25.000 mg/l	10/12/88	MIDWEST RUBBER
TSS	29.000 mg/l	10/18/88	MIDWEST RUBBER
TSS	27.000 mg/l	10/26/88	MIDWEST RUBBER
TSS	117.000 mg/l	02/21/89	MIDWEST RUBBER
TSS	28.000 mg/l	04/12/89	MONSANTO
TSS	28.000 mg/l	04/12/89	MONSANTO
TSS	60.000 mg/l	03/15/89	MONSANTO
TSS	28.000 mg/l	02/15/89	MONSANTO
TSS	13.000 mg/l	01/18/89	MONSANTO

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
TSS	320.000 mg/l	12/07/88	MONSANTO
TSS	38.000 mg/l	12/14/88	MONSANTO
TSS	18.000 mg/l	12/19/88	MONSANTO
TSS	15.000 mg/l	12/27/88	MONSANTO
TSS	24.000 mg/l	12/14/88	MONSANTO
TSS	11.000 mg/l	11/09/88	MONSANTO
TSS	6.000 mg/l	10/06/88	MONSANTO
TSS	4.000 mg/l	10/13/88	MONSANTO
TSS	5.000 mg/l	10/18/88	MONSANTO
TSS	14.000 mg/l	10/26/88	MONSANTO
TSS	7.000 mg/l	10/12/88	MONSANTO
TSS	15.000 mg/l	09/14/88	MONSANTO
TSS	280.000 mg/l	08/15/88	MONSANTO
TSS	33.000 mg/l	08/23/88	MONSANTO
TSS	22.000 mg/l	08/29/88	MONSANTO
TSS	28.000 mg/l	09/06/88	MONSANTO
TSS	15.000 mg/l	08/10/88	MONSANTO
TSS	31.000 mg/l	07/13/88	MONSANTO
TSS	20.000 mg/l	04/18/89	MUSICK
TSS	49.000 mg/l	03/21/89	MUSICK
TSS	19.000 mg/l	01/04/89	MUSICK
TSS	26.000 mg/l	11/21/88	MUSICK
TSS	47.000 mg/l	04/19/89	PFIZER-SE
TSS	24.000 mg/l	03/21/89	PFIZER-SE
TSS	150.000 mg/l	02/27/89	PFIZER-SE
TSS	84.000 mg/l	12/09/88	PFIZER-SE
TSS	166.000 mg/l	12/15/88	PFIZER-SE
TSS	30.000 mg/l	12/20/88	PFIZER-SE
TSS	194.000 mg/l	12/28/88	PFIZER-SE
TSS	125.000 mg/l	10/03/88	PFIZER-SE
TSS	129.000 mg/l	10/12/88	PFIZER-SE
TSS	349.000 mg/l	10/19/88	PFIZER-SE
TSS	130.000 mg/l	04/19/89	PFIZER-SW
TSS	230.000 mg/l	03/21/89	PFIZER-SW
TSS	32.000 mg/l	02/27/89	PFIZER-SW
TSS	420.000 mg/l	12/09/88	PFIZER-SW
TSS	36.000 mg/l	12/15/88	PFIZER-SW
TSS	166.000 mg/l	12/20/88	PFIZER-SW
TSS	86.000 mg/l	12/28/88	PFIZER-SW
TSS	28.000 mg/l	10/03/88	PFIZER-SW
TSS	21.000 mg/l	10/12/88	PFIZER-SW
TSS	19.000 mg/l	10/19/88	PFIZER-SW
TSS	164.000 mg/l	07/05/88	PFIZER-SW
TSS	42.000 mg/l	07/12/88	PFIZER-SW
TSS	16.000 mg/l	07/21/88	PFIZER-SW
TSS	46.000 mg/l	07/27/88	PFIZER-SW
TSS	270.000 mg/l	04/12/89	ROGERS CARTAGE
TSS	360.000 mg/l	03/15/89	ROGERS CARTAGE
TSS	267.000 mg/l	11/25/88	ROGERS CARTAGE
TSS	15.000 mg/l	11/27/88	ROGERS CARTAGE
TSS	190.000 mg/l	11/28/88	ROGERS CARTAGE
TSS	446.000 mg/l	11/29/88	ROGERS CARTAGE
TSS	329.000 mg/l	11/30/88	ROGERS CARTAGE
TSS	314.000 mg/l	01/26/89	ROGERS CARTAGE
TSS	810.000 mg/l	01/27/89	ROGERS CARTAGE
TSS	13.000 mg/l	01/28/89	ROGERS CARTAGE
TSS	858.000 mg/l	01/30/89	ROGERS CARTAGE
TSS	2636.000 mg/l	01/31/89	ROGERS CARTAGE
TSS	527.000 mg/l	02/01/89	ROGERS CARTAGE

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
TSS	388.000 mg/l	02/02/89	ROGERS CARTAGE
TSS	302.000 mg/l	02/03/89	ROGERS CARTAGE
TSS	146.000 mg/l	02/08/89	ROGERS CARTAGE
TSS	64.000 mg/l	02/09/89	ROGERS CARTAGE
TSS	1388.000 mg/l	02/10/89	ROGERS CARTAGE
TSS	212.000 mg/l	02/13/89	ROGERS CARTAGE
TSS	144.000 mg/l	02/14/89	ROGERS CARTAGE
TSS	187.000 mg/l	02/16/89	ROGERS CARTAGE
TSS	128.000 mg/l	02/17/89	ROGERS CARTAGE
TSS	3.000 mg/l	02/19/89	ROGERS CARTAGE
TSS	716.000 mg/l	02/20/89	ROGERS CARTAGE
TSS	372.000 mg/l	03/17/89	ROGERS CARTAGE
TSS	14.000 mg/l	03/18/89	ROGERS CARTAGE
TSS	72.000 mg/l	03/20/89	ROGERS CARTAGE
TSS	86.000 mg/l	03/21/89	ROGERS CARTAGE
TSS	147.000 mg/l	03/22/89	ROGERS CARTAGE
TSS	375.000 mg/l	03/23/89	ROGERS CARTAGE
TSS	208.000 mg/l	03/24/89	ROGERS CARTAGE
TSS	364.000 mg/l	04/05/89	ROGERS CARTAGE
TSS	260.000 mg/l	04/06/89	ROGERS CARTAGE
TSS	149.000 mg/l	04/07/89	ROGERS CARTAGE
TSS	36.000 mg/l	04/08/89	ROGERS CARTAGE
TSS	612.000 mg/l	04/10/89	ROGERS CARTAGE
TSS	44.000 mg/l	04/12/89	ROGERS CARTAGE
TSS	65.000 mg/l	04/13/89	ROGERS CARTAGE
TSS	160.000 mg/l	04/14/89	ROGERS CARTAGE
TSS	45.000 mg/l	04/16/89	ROGERS CARTAGE
TSS	164.000 mg/l	04/17/89	ROGERS CARTAGE
TSS	152.000 mg/l	04/18/89	ROGERS CARTAGE
TSS	91.000 mg/l	04/19/89	ROGERS CARTAGE
TSS	56.000 mg/l	04/20/89	ROGERS CARTAGE
TSS	840.000 mg/l	04/21/89	ROGERS CARTAGE
TSS	8.000 mg/l	04/22/89	ROGERS CARTAGE
TSS	428.000 mg/l	04/24/89	ROGERS CARTAGE
TSS	58.000 mg/l	04/25/89	ROGERS CARTAGE
TSS	128.000 mg/l	04/26/89	ROGERS CARTAGE
TSS	142.000 mg/l	04/27/89	ROGERS CARTAGE
TSS	66.000 mg/l	04/28/89	ROGERS CARTAGE
TSS	11.000 mg/l	04/30/89	ROGERS CARTAGE
TSS	171.000 mg/l	05/01/89	ROGERS CARTAGE
TSS	98.000 mg/l	05/02/89	ROGERS CARTAGE
TSS	147.000 mg/l	05/03/89	ROGERS CARTAGE
TSS	50.000 mg/l	05/04/89	ROGERS CARTAGE
TSS	572.000 mg/l	05/05/89	ROGERS CARTAGE
TSS	36.000 mg/l	05/07/89	ROGERS CARTAGE
TSS	273.000 mg/l	05/08/89	ROGERS CARTAGE
TSS	93.000 mg/l	05/09/89	ROGERS CARTAGE
TSS	431.000 mg/l	05/10/89	ROGERS CARTAGE
TSS	97.000 mg/l	05/11/89	ROGERS CARTAGE
TSS	73.000 mg/l	05/12/89	ROGERS CARTAGE
TSS	27.000 mg/l	05/14/89	ROGERS CARTAGE
TSS	16.000 mg/l	05/15/89	ROGERS CARTAGE
TSS	843.000 mg/l	05/16/89	ROGERS CARTAGE
TSS	228.000 mg/l	05/17/89	ROGERS CARTAGE
TSS	719.000 mg/l	05/18/89	ROGERS CARTAGE
TSS	9.000 mg/l	05/21/89	ROGERS CARTAGE
TSS	1079.000 mg/l	05/22/89	ROGERS CARTAGE
TSS	558.000 mg/l	05/23/89	ROGERS CARTAGE
TSS	122.000 mg/l	05/24/89	ROGERS CARTAGE
TSS	270.000 mg/l	05/25/89	ROGERS CARTAGE
TSS	168.000 mg/l	05/26/89	ROGERS CARTAGE
TSS	211.000 mg/l	05/30/89	ROGERS CARTAGE
TSS	165.000 mg/l	05/31/89	ROGERS CARTAGE

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
TSS	70.000 mg/l	06/01/89	ROGERS CARTAGE
TSS	338.000 mg/l	06/02/89	ROGERS CARTAGE
TSS	19.000 mg/l	06/04/89	ROGERS CARTAGE
TSS	51.000 mg/l	06/05/89	ROGERS CARTAGE
TSS	395.000 mg/l	06/06/89	ROGERS CARTAGE
TSS	476.000 mg/l	06/07/89	ROGERS CARTAGE
TSS	653.000 mg/l	06/08/89	ROGERS CARTAGE
TSS	248.000 mg/l	06/09/89	ROGERS CARTAGE
TSS	94.000 mg/l	06/11/89	ROGERS CARTAGE
TSS	326.000 mg/l	06/12/89	ROGERS CARTAGE
TSS	51.000 mg/l	06/13/89	ROGERS CARTAGE
TSS	122.000 mg/l	06/14/89	ROGERS CARTAGE
TSS	980.000 mg/l	06/15/89	ROGERS CARTAGE
TSS	470.000 mg/l	06/16/89	ROGERS CARTAGE
TSS	3600.000 mg/l	04/12/89	TRADE WASTE
TSS	43000.000 mg/l	03/15/89	TRADE WASTE
TSS (avg)(1)	122.000 mg/l	05/89	PFIZER-SE
TSS (avg)(1)	242.000 mg/l	04/89	PFIZER-SE
TSS (avg)(1)	146.000 mg/l	03/89	PFIZER-SE
TSS (avg)(1)	294.000 mg/l	02/89	PFIZER-SE
TSS (avg)(1)	177.000 mg/l	01/89	PFIZER-SE
TSS (avg)(1)	132.000 mg/l	12/88	PFIZER-SE
TSS (avg)(1)	143.000 mg/l	11/88	PFIZER-SE
TSS (avg)(1)	128.000 mg/l	10/88	PFIZER-SE
TSS (avg)(1)	204.000 mg/l	09/88	PFIZER-SE
TSS (avg)(1)	188.000 mg/l	08/88	PFIZER-SE
TSS (avg)(1)	311.000 mg/l	07/88	PFIZER-SE
TSS (avg)(1)	161.000 mg/l	06/88	PFIZER-SE
TSS (avg)(1)	245.000 mg/l	05/88	PFIZER-SE
TSS (avg)(1)	680.000 mg/l	04/88	PFIZER-SE
TSS (avg)(1)	666.000 mg/l	03/88	PFIZER-SE
TSS (avg)(1)	934.000 mg/l	02/88	PFIZER-SE
TSS (avg)(1)	88.000 mg/l	05/89	PFIZER-SW
TSS (avg)(1)	146.000 mg/l	04/89	PFIZER-SW
TSS (avg)(1)	169.000 mg/l	03/89	PFIZER-SW
TSS (avg)(1)	157.000 mg/l	02/89	PFIZER-SW
TSS (avg)(1)	113.000 mg/l	01/89	PFIZER-SW
TSS (avg)(1)	118.000 mg/l	12/88	PFIZER-SW
TSS (avg)(1)	68.000 mg/l	11/88	PFIZER-SW
TSS (avg)(1)	82.000 mg/l	10/88	PFIZER-SW
TSS (avg)(1)	264.000 mg/l	09/88	PFIZER-SW
TSS (avg)(1)	111.000 mg/l	08/88	PFIZER-SW
TSS (avg)(1)	107.000 mg/l	07/88	PFIZER-SW
TSS (avg)(1)	113.000 mg/l	06/88	PFIZER-SW
TSS (avg)(1)	78.000 mg/l	05/88	PFIZER-SW
TSS (avg)(1)	91.000 mg/l	04/88	PFIZER-SW
TSS (avg)(1)	214.000 mg/l	03/88	PFIZER-SW
TSS (avg)(1)	293.000 mg/l	02/88	PFIZER-SW
Tetrachloroethene	160. ug/l	04/12/89	CERRO-WEST
Tetrachloroethene	130. ug/l	04/12/89	CLAYTON
Tetrachloroethene	79. ug/l	01/26/89	LANCHEM
Tetrachloroethene	290. ug/l	08/10/88	MONSANTO
Tetradecanoic Acid	20. ug/l	03/21/89	PFIZER-SE
Thallium	0.000 mg/l	04/12/89	BIG RIVER ZINC

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Thallium	0.000 mg/l	03/15/89	BIG RIVER ZINC
Thallium	0.000 mg/l	02/21/89	BIG RIVER ZINC
Thallium	0.000 mg/l	04/12/89	CERRO-EAST
Thallium	0.000 mg/l	03/15/89	CERRO-EAST
Thallium	0.000 mg/l	02/22/89	CERRO-EAST
Thallium	0.000 mg/l	04/12/89	CERRO-WEST
Thallium	0.000 mg/l	03/15/89	CERRO-WEST
Thallium	0.000 mg/l	02/22/89	CERRO-WEST
Thallium	0.200 mg/l	08/12/88	CERRO-WEST
Thallium	0.200 mg/l	08/19/88	CERRO-WEST
Thallium	0.005 mg/l	08/24/88	CERRO-WEST
Thallium	0.000 mg/l	04/12/89	CLAYTON
Thallium	0.000 mg/l	03/15/89	CLAYTON
Thallium	0.000 mg/l	04/12/89	ETHYL
Thallium	0.000 mg/l	03/15/89	ETHYL
Thallium	0.000 mg/l	04/18/89	LANCHEM
Thallium	0.000 mg/l	03/21/89	LANCHEM
Thallium	0.090 mg/l	01/26/89	LANCHEM
Thallium	0.010 mg/l	11/01/88	LANCHEM
Thallium	0.000 mg/l	04/12/89	MIDWEST RUBBER
Thallium	0.000 mg/l	03/15/89	MIDWEST RUBBER
Thallium	0.000 mg/l	02/21/89	MIDWEST RUBBER
Thallium	0.000 mg/l	04/12/89	MONSANTO
Thallium	0.000 mg/l	03/15/89	MONSANTO
Thallium	0.000 mg/l	02/15/89	MONSANTO
Thallium	0.000 mg/l	01/18/89	MONSANTO
Thallium	0.000 mg/l	12/14/88	MONSANTO
Thallium	0.000 mg/l	11/09/88	MONSANTO
Thallium	0.005 mg/l	10/13/88	MONSANTO
Thallium	0.005 mg/l	10/18/88	MONSANTO
Thallium	0.005 mg/l	10/26/88	MONSANTO
Thallium	0.000 mg/l	10/12/88	MONSANTO
Thallium	0.000 mg/l	09/14/88	MONSANTO
Thallium	0.000 mg/l	08/10/88	MONSANTO
Thallium	0.000 mg/l	07/13/88	MONSANTO
Thallium	0.700 mg/l	04/18/89	MUSICK
Thallium	0.000 mg/l	03/21/89	MUSICK
Thallium	0.100 mg/l	01/04/89	MUSICK
Thallium	0.100 mg/l	11/21/88	MUSICK
Thallium	0.000 mg/l	04/19/89	PFIZER-SE
Thallium	0.000 mg/l	03/21/89	PFIZER-SE
Thallium	0.000 mg/l	02/27/89	PFIZER-SE
Thallium	0.004 mg/l	12/09/88	PFIZER-SE
Thallium	0.004 mg/l	12/15/88	PFIZER-SE
Thallium	0.000 mg/l	04/19/89	PFIZER-SW
Thallium	0.000 mg/l	03/21/89	PFIZER-SW
Thallium	0.000 mg/l	02/27/89	PFIZER-SW
Thallium	0.004 mg/l	12/09/88	PFIZER-SW
Thallium	0.004 mg/l	12/15/88	PFIZER-SW
Thallium	0.000 mg/l	04/12/89	ROGERS CARTAGE
Thallium	0.000 mg/l	03/15/89	ROGERS CARTAGE

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APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION		SAMPLING DATE	INDUSTRY
Thallium	0.000	mg/l	04/12/89	TRADE WASTE
Thallium	0.000	mg/l	03/15/89	TRADE WASTE
Toluene	3.	ug/l	04/12/89	CERRO-EAST
Toluene	120.	ug/l	04/12/89	CERRO-WEST
Toluene	280.	ug/l	04/12/89	CLAYTON
Toluene	2200.	ug/l	03/15/89	CLAYTON
Toluene	120.	ug/l	03/21/89	LANCHEM
Toluene	590.	ug/l	04/12/89	MIDWEST RUBBER
Toluene	390.	ug/l	12/14/88	MONSANTO
Toluene	3.	ug/l	12/28/89	MUSICK
Toluene	2.	ug/l	03/21/89	PFIZER-SE
Toluene	2.	ug/l	04/12/89	TRADE WASTE
Trans-1,2-Dichloroethene	196.	ug/l	01/26/89	LANCHEM
Trichloroethene	6.	ug/l	04/12/89	CERRO-EAST
Trichloroethene	8.	ug/l	04/12/89	CERRO-EAST
Trichloroethene	68.	ug/l	04/12/89	CERRO-WEST
Trichloroethene	28.	ug/l	03/15/89	CERRO-WEST
Trichloroethene	110.	ug/l	04/12/89	CLAYTON
Trichloroethene	125.	ug/l	01/26/89	LANCHEM
Xylene	19.	ug/l	04/12/89	CERRO-EAST
Xylene	9.	ug/l	04/12/89	CERRO-EAST
Xylene	240.	ug/l	04/12/89	CERRO-WEST
Xylene	1100.	ug/l	04/12/89	CLAYTON
Xylene	21000.	ug/l	03/15/89	CLAYTON
Xylene	2100.	ug/l	03/15/89	ETHYL
Xylene	6100.	ug/l	03/21/89	LANCHEM
Xylene	6.	ug/l	11/01/88	LANCHEM
Xylene	2400.	ug/l	04/12/89	MIDWEST RUBBER
Xylene	94.	ug/l	03/15/89	MIDWEST RUBBER
Xylene	2800.	ug/l	04/12/89	MONSANTO
Xylene	720.	ug/l	03/15/89	MONSANTO
Xylene	2500.	ug/l	02/15/89	MONSANTO
Xylene	1400.	ug/l	01/18/89	MONSANTO
Xylene	3600.	ug/l	12/14/88	MONSANTO
Xylene	1500.	ug/l	11/09/88	MONSANTO
Xylene	280.	ug/l	10/12/88	MONSANTO
Xylene	1700.	ug/l	09/14/88	MONSANTO
Xylene	1400.	ug/l	08/10/88	MONSANTO
Xylene	4900.	ug/l	07/13/88	MONSANTO
Xylene	5.	ug/l	03/21/89	PFIZER-SE

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
Xylene	15. ug/l	04/12/89	TRADE WASTE
Xylene	10. ug/l	04/12/89	TRADE WASTE
Zinc	0.990 mg/l	03/22/89	BIG RIVER ZINC
Zinc	1.850 mg/l	04/27/89	BIG RIVER ZINC
Zinc	2.850 ug/l	05/01/89	BIG RIVER ZINC
Zinc	0.160 ug/l	05/09/89	BIG RIVER ZINC
Zinc	3.160 ug/l	05/17/89	BIG RIVER ZINC
Zinc	3.190 ug/l	05/25/89	BIG RIVER ZINC
Zinc	3.700 mg/l	04/12/89	BIG RIVER ZINC
Zinc	2.000 mg/l	03/15/89	BIG RIVER ZINC
Zinc	2.000 mg/l	02/21/89	BIG RIVER ZINC
Zinc	2.340 mg/l	06/02/89	BIG RIVER ZINC
Zinc	2.270 mg/l	06/05/89	BIG RIVER ZINC
Zinc	0.610 ug/l	06/13/89	BIG RIVER ZINC
Zinc	2.790 mg/l	04/27/89	CERRO-EAST
Zinc	4.360 mg/l	05/01/89	CERRO-EAST
Zinc	6.490 mg/l	05/09/89	CERRO-EAST
Zinc	1.960 mg/l	05/17/89	CERRO-EAST
Zinc	4.410 mg/l	05/25/89	CERRO-EAST
Zinc	13.800 mg/l	04/12/89	CERRO-EAST
Zinc	9.000 mg/l	03/15/89	CERRO-EAST
Zinc	100.000 mg/l	02/22/89	CERRO-EAST
Zinc	0.760 mg/l	06/02/89	CERRO-EAST
Zinc	28.820 mg/l	06/05/89	CERRO-EAST
Zinc	11.950 mg/l	06/13/89	CERRO-EAST
Zinc	0.130 mg/l	04/12/89	CERRO-WEST
Zinc	0.230 mg/l	03/15/89	CERRO-WEST
Zinc	0.540 mg/l	02/22/89	CERRO-WEST
Zinc	21.600 mg/l	08/12/88	CERRO-WEST
Zinc	2.610 mg/l	06/02/89	CERRO-WEST
Zinc	1.580 mg/l	06/05/89	CERRO-WEST
Zinc	0.130 mg/l	06/13/89	CERRO-WEST
Zinc	0.460 mg/l	04/12/89	CLAYTON
Zinc	0.097 mg/l	03/15/89	CLAYTON
Zinc	2.000 mg/l	04/12/89	ETHYL
Zinc	1.300 mg/l	03/15/89	ETHYL
Zinc	0.210 mg/l	04/18/89	LANCHEM
Zinc	0.048 mg/l	03/21/89	LANCHEM
Zinc	0.110 mg/l	01/26/89	LANCHEM
Zinc	0.730 mg/l	11/01/88	LANCHEM
Zinc	0.140 mg/l	04/12/89	MIDWEST RUBBER
Zinc	0.350 mg/l	03/15/89	MIDWEST RUBBER
Zinc	0.252 mg/l	02/21/89	MIDWEST RUBBER
Zinc	0.140 mg/l	04/12/89	MONSANTO
Zinc	0.190 mg/l	03/15/89	MONSANTO
Zinc	0.241 mg/l	02/15/89	MONSANTO
Zinc	0.099 mg/l	01/18/89	MONSANTO
Zinc	0.423 mg/l	12/07/88	MONSANTO
Zinc	0.035 mg/l	12/14/88	MONSANTO
Zinc	0.077 mg/l	12/19/88	MONSANTO
Zinc	0.016 mg/l	12/27/88	MONSANTO
Zinc	0.040 mg/l	12/14/88	MONSANTO
Zinc	0.034 mg/l	11/09/88	MONSANTO
Zinc	0.220 mg/l	10/06/88	MONSANTO
Zinc	0.080 mg/l	10/13/88	MONSANTO

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~~EPA/CERRO COPPER/EIL/PCB ATTORNEY WORK PRODUCT / ATTORNEY CLIENT PRIVILEGE~~

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION		SAMPLING DATE	INDUSTRY
Zinc	0.165	mg/l	10/18/88	MONSANTO
Zinc	0.093	mg/l	10/26/88	MONSANTO
Zinc	0.101	mg/l	10/12/88	MONSANTO
Zinc	0.181	mg/l	09/14/88	MONSANTO
Zinc	0.240	mg/l	08/15/88	MONSANTO
Zinc	0.180	mg/l	08/23/88	MONSANTO
Zinc	0.098	mg/l	08/29/88	MONSANTO
Zinc	0.170	mg/l	09/06/88	MONSANTO
Zinc	0.093	mg/l	08/10/88	MONSANTO
Zinc	0.102	mg/l	07/13/88	MONSANTO
Zinc	0.510	mg/l	04/18/89	MUSICK
Zinc	0.290	mg/l	03/21/89	MUSICK
Zinc	0.470	mg/l	05/17/89	MUSICK
Zinc	0.125	mg/l	11/07/88	MUSICK
Zinc	0.002	mg/l	12/05/88	MUSICK
Zinc	0.034	mg/l	01/09/89	MUSICK
Zinc	0.036	mg/l	02/13/89	MUSICK
Zinc	0.050	mg/l	06/13/89	MUSICK
Zinc	0.033	mg/l	04/19/89	PFIZER-SE
Zinc	0.220	mg/l	03/21/89	PFIZER-SE
Zinc	81.000	mg/l	02/27/89	PFIZER-SE
Zinc	0.028	mg/l	04/19/89	PFIZER-SW
Zinc	0.087	mg/l	03/21/89	PFIZER-SW
Zinc	0.054	mg/l	02/27/89	PFIZER-SW
Zinc	0.790	mg/l	04/12/89	ROGERS CARTAGE
Zinc	1.100	mg/l	03/15/89	ROGERS CARTAGE
Zinc	24.800	mg/l	04/12/89	TRADE WASTE
Zinc	0.420	mg/l	03/15/89	TRADE WASTE
Zinc (avg)(1)	2.140	mg/l	04/88	PFIZER-SE
Zinc (avg)(1)	0.860	mg/l	03/88	PFIZER-SE
Zinc (avg)(1)	0.380	mg/l	02/88	PFIZER-SE
Zinc (avg)(1)	0.050	mg/l	04/88	PFIZER-SW
Zinc (avg)(1)	0.120	mg/l	03/88	PFIZER-SW
Zinc (avg)(1)	0.040	mg/l	02/88	PFIZER-SW
bis(2-Ethylhexyl)Phthalate	6.	ug/l	04/12/89	BIG RIVER ZINC
bis(2-Ethylhexyl)Phthalate	15.	ug/l	03/15/89	BIG RIVER ZINC
bis(2-Ethylhexyl)Phthalate	24.	ug/l	04/12/89	CERRO-WEST
bis(2-Ethylhexyl)Phthalate	7.	ug/l	03/15/89	CERRO-WEST
bis(2-Ethylhexyl)Phthalate	1200.	ug/l	04/12/89	CLAYTON
bis(2-Ethylhexyl)Phthalate	15.	ug/l	03/15/89	CLAYTON
bis(2-Ethylhexyl)Phthalate	12.	ug/l	03/15/89	ETHYL
bis(2-Ethylhexyl)Phthalate	14.	ug/l	03/15/89	MONSANTO
bis(2-Ethylhexyl)Phthalate	9.	ug/l	10/12/88	MONSANTO
bis(2-Ethylhexyl)Phthalate	12.	ug/l	09/14/88	MONSANTO
bis(2-Ethylhexyl)Phthalate	24.	ug/l	08/10/88	MONSANTO
bis(2-Ethylhexyl)Phthalate	33.	ug/l	03/21/89	MUSICK
bis(2-Ethylhexyl)Phthalate	9.	ug/l	04/05/89	MUSICK
bis(2-Ethylhexyl)Phthalate	2.	ug/l	12/28/89	MUSICK
bis(2-Ethylhexyl)Phthalate	23.	ug/l	03/21/89	PFIZER-SE

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION		SAMPLING DATE	INDUSTRY
bis(2-Ethylhexyl)Phthalate	20.	ug/l	03/21/89	PFIZER-SW
bis(2-Ethylhexyl)Phthalate	32.	ug/l	03/15/89	ROGERS CARTAGE
bis(2-Ethylhexyl)Phthalate	5.	ug/l	04/12/89	TRADE WASTE
bis(2-Ethylhexyl)Phthalate	6.	ug/l	03/15/89	TRADE WASTE
pH	7.900	S.U.	04/12/89	BIG RIVER ZINC
pH	7.600	S.U.	03/15/89	BIG RIVER ZINC
pH	7.400	S.U.	02/21/89	BIG RIVER ZINC
pH	8.990	S.U.	12/08/88	BIG RIVER ZINC
pH	8.570	S.U.	12/15/88	BIG RIVER ZINC
pH	8.600	S.U.	12/22/88	BIG RIVER ZINC
pH	8.740	S.U.	12/28/88	BIG RIVER ZINC
pH	8.900	S.U.	10/06/88	BIG RIVER ZINC
pH	7.800	S.U.	10/10/88	BIG RIVER ZINC
pH	7.750	S.U.	10/20/88	BIG RIVER ZINC
pH	8.030	S.U.	10/27/88	BIG RIVER ZINC
pH	6.620	S.U.	08/04/88	BIG RIVER ZINC
pH	8.640	S.U.	08/12/88	BIG RIVER ZINC
pH	8.630	S.U.	08/19/88	BIG RIVER ZINC
pH	7.660	S.U.	08/26/88	BIG RIVER ZINC
pH	8.950	S.U.	07/27/88	BIG RIVER ZINC
pH	7.590	S.U.	07/31/88	BIG RIVER ZINC
pH	8.570	S.U.	08/02/88	BIG RIVER ZINC
pH	8.950	S.U.	08/06/88	BIG RIVER ZINC
pH	7.870	S.U.	08/10/88	BIG RIVER ZINC
pH	8.980	S.U.	08/14/88	BIG RIVER ZINC
pH	8.700	S.U.	08/16/88	BIG RIVER ZINC
pH	8.910	S.U.	08/20/88	BIG RIVER ZINC
pH	7.500	S.U.	04/12/89	CERRO-EAST
pH	9.900	S.U.	03/15/89	CERRO-EAST
pH	2.200	S.U.	02/22/89	CERRO-EAST
pH	2.280	S.U.	07/27/88	CERRO-EAST
pH	2.450	S.U.	07/31/88	CERRO-EAST
pH	2.080	S.U.	08/02/88	CERRO-EAST
pH	2.450	S.U.	08/06/88	CERRO-EAST
pH	3.560	S.U.	08/10/88	CERRO-EAST
pH	1.610	S.U.	08/14/88	CERRO-EAST
pH	3.300	S.U.	08/16/88	CERRO-EAST
pH	6.070	S.U.	08/20/88	CERRO-EAST
pH	3.240	S.U.	12/07/88	CERRO-EAST
pH	3.240	S.U.	12/07/88	CERRO-EAST
pH	2.600	S.U.	12/14/88	CERRO-EAST
pH	4.540	S.U.	12/22/88	CERRO-EAST
pH	5.510	S.U.	12/29/88	CERRO-EAST
pH	7.300	S.U.	08/05/88	CERRO-EAST
pH	2.060	S.U.	08/12/88	CERRO-EAST
pH	7.300	S.U.	08/19/88	CERRO-EAST
pH	2.600	S.U.	08/24/88	CERRO-EAST
pH	3.000	S.U.	08/24/88	CERRO-EAST
pH	2.600	S.U.	08/24/88	CERRO-EAST
pH	2.200	S.U.	08/24/88	CERRO-EAST
pH	2.800	S.U.	08/24/88	CERRO-EAST
pH	2.600	S.U.	08/24/88	CERRO-EAST
pH	2.580	S.U.	10/07/88	CERRO-EAST
pH	4.070	S.U.	10/14/88	CERRO-EAST
pH	2.310	S.U.	10/21/88	CERRO-EAST
pH	2.100	S.U.	10/26/88	CERRO-EAST
pH	8.300	S.U.	04/12/89	CERRO-WEST

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
pH	8.500 S.U.	03/15/89	CERRO-WEST
pH	8.400 S.U.	02/22/89	CERRO-WEST
pH	7.150 S.U.	08/12/88	CERRO-WEST
pH	7.950 S.U.	08/19/88	CERRO-WEST
pH	7.800 S.U.	08/24/88	CERRO-WEST
pH	6.800 S.U.	08/24/88	CERRO-WEST
pH	7.600 S.U.	08/24/88	CERRO-WEST
pH	8.100 S.U.	08/24/88	CERRO-WEST
pH	8.200 S.U.	08/24/88	CERRO-WEST
pH	8.000 S.U.	08/24/88	CERRO-WEST
pH	7.960 S.U.	10/07/88	CERRO-WEST
pH	7.480 S.U.	10/14/88	CERRO-WEST
pH	7.340 S.U.	10/21/88	CERRO-WEST
pH	7.400 S.U.	10/26/88	CERRO-WEST
pH	8.000 S.U.	12/07/88	CERRO-WEST
pH	8.070 S.U.	12/07/88	CERRO-WEST
pH	8.330 S.U.	12/14/88	CERRO-WEST
pH	7.400 S.U.	12/22/88	CERRO-WEST
pH	8.200 S.U.	12/29/88	CERRO-WEST
pH	8.080 S.U.	07/27/88	CERRO-WEST
pH	6.190 S.U.	07/31/88	CERRO-WEST
pH	2.530 S.U.	08/02/88	CERRO-WEST
pH	6.070 S.U.	08/06/88	CERRO-WEST
pH	7.610 S.U.	08/10/88	CERRO-WEST
pH	5.750 S.U.	08/14/88	CERRO-WEST
pH	7.560 S.U.	08/16/88	CERRO-WEST
pH	7.370 S.U.	08/20/88	CERRO-WEST
pH	10.700 S.U.	04/12/89	CLAYTON
pH	7.500 S.U.	03/15/89	CLAYTON
pH	7.670 S.U.	07/27/88	CLAYTON
pH	7.990 S.U.	07/31/88	CLAYTON
pH	7.490 S.U.	08/02/88	CLAYTON
pH	7.860 S.U.	08/06/88	CLAYTON
pH	8.710 S.U.	08/10/88	CLAYTON
pH	6.450 S.U.	08/14/88	CLAYTON
pH	7.200 S.U.	08/16/88	CLAYTON
pH	7.110 S.U.	08/20/88	CLAYTON
pH	4.100 S.U.	04/12/89	ETHYL
pH	1.100 S.U.	03/15/89	ETHYL
pH	2.730 S.U.	07/07/88	ETHYL
pH	8.130 S.U.	07/13/88	ETHYL
pH	7.360 S.U.	07/21/88	ETHYL
pH	1.670 S.U.	07/28/88	ETHYL
pH	1.260 S.U.	10/06/88	ETHYL
pH	1.810 S.U.	10/13/88	ETHYL
pH	1.720 S.U.	10/20/88	ETHYL
pH	1.560 S.U.	10/27/88	ETHYL
pH	2.010 S.U.	12/09/88	ETHYL
pH	6.600 S.U.	12/15/88	ETHYL
pH	2.060 S.U.	12/22/88	ETHYL
pH	1.940 S.U.	12/29/88	ETHYL
pH	6.960 S.U.	07/27/88	ETHYL
pH	5.400 S.U.	07/31/88	ETHYL
pH	2.030 S.U.	08/02/88	ETHYL
pH	2.220 S.U.	08/06/88	ETHYL
pH	2.670 S.U.	08/10/88	ETHYL
pH	1.690 S.U.	08/14/88	ETHYL
pH	7.730 S.U.	08/16/88	ETHYL
pH	2.340 S.U.	08/20/88	ETHYL
pH	12.500 S.U.	04/18/89	LANCHEM

~~EPA/CERRO COPPER/EIL/PCB ATTORNEY WORK PRODUCT / ATTORNEY CLIENT PRIVILEGE~~

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
pH	9.200 S.U.	03/21/89	LANCHEM
pH	8.020 S.U.	01/26/89	LANCHEM
pH	12.750 S.U.	11/01/88	LANCHEM
pH	7.800 S.U.	04/12/89	MIDWEST RUBBER
pH	8.400 S.U.	03/15/89	MIDWEST RUBBER
pH	7.700 S.U.	08/08/88	MIDWEST RUBBER
pH	7.600 S.U.	08/09/88	MIDWEST RUBBER
pH	7.500 S.U.	08/17/88	MIDWEST RUBBER
pH	7.800 S.U.	02/21/89	MIDWEST RUBBER
pH	8.020 S.U.	07/27/88	MIDWEST RUBBER
pH	7.440 S.U.	07/31/88	MIDWEST RUBBER
pH	7.700 S.U.	08/02/88	MIDWEST RUBBER
pH	8.130 S.U.	08/06/88	MIDWEST RUBBER
pH	7.540 S.U.	08/10/88	MIDWEST RUBBER
pH	6.700 S.U.	08/14/88	MIDWEST RUBBER
pH	7.850 S.U.	08/16/88	MIDWEST RUBBER
pH	6.800 S.U.	08/20/88	MIDWEST RUBBER
pH	1.800 S.U.	04/12/89	MONSANTO
pH	1.800 S.U.	04/12/89	MONSANTO
pH	9.000 S.U.	03/15/89	MONSANTO
pH	1.740 S.U.	02/15/89	MONSANTO
pH	1.650 S.U.	01/18/89	MONSANTO
pH	1.800 S.U.	12/14/88	MONSANTO
pH	1.660 S.U.	12/14/88	MONSANTO
pH	9.010 S.U.	11/09/88	MONSANTO
pH	1.550 S.U.	10/06/88	MONSANTO
pH	7.570 S.U.	10/13/88	MONSANTO
pH	6.890 S.U.	10/18/88	MONSANTO
pH	2.210 S.U.	10/26/88	MONSANTO
pH	2.080 S.U.	10/12/88	MONSANTO
pH	2.410 S.U.	09/14/88	MONSANTO
pH	2.070 S.U.	08/15/88	MONSANTO
pH	1.840 S.U.	08/23/88	MONSANTO
pH	1.600 S.U.	08/29/88	MONSANTO
pH	2.440 S.U.	09/06/88	MONSANTO
pH	2.080 S.U.	08/15/88	MONSANTO
pH	1.810 S.U.	08/23/88	MONSANTO
pH	1.590 S.U.	08/29/88	MONSANTO
pH	2.440 S.U.	09/06/88	MONSANTO
pH	2.670 S.U.	08/10/88	MONSANTO
pH	3.180 S.U.	07/13/88	MONSANTO
pH	2.270 S.U.	07/27/88	MONSANTO
pH	3.550 S.U.	07/31/88	MONSANTO
pH	2.230 S.U.	08/02/88	MONSANTO
pH	1.250 S.U.	08/06/88	MONSANTO
pH	2.780 S.U.	08/10/88	MONSANTO
pH	1.570 S.U.	08/14/88	MONSANTO
pH	1.860 S.U.	08/16/88	MONSANTO
pH	2.600 S.U.	08/20/88	MONSANTO
pH	3.400 S.U.	04/18/89	MUSICK
pH	8.800 S.U.	03/21/89	MUSICK
pH	9.100 S.U.	04/05/89	MUSICK
pH	9.200 S.U.	02/28/88	MUSICK
pH	8.900 S.U.	04/19/89	PFIZER-SE
pH	8.000 S.U.	03/21/89	PFIZER-SE
pH	9.000 S.U.	02/27/89	PFIZER-SE
pH	8.900 S.U.	12/09/88	PFIZER-SE
pH	9.050 S.U.	12/15/88	PFIZER-SE
pH	7.400 S.U.	12/20/88	PFIZER-SE

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
pH	7.260 S.U.	12/28/88	PFIZER-SE
pH	6.440 S.U.	10/03/88	PFIZER-SE
pH	8.970 S.U.	10/12/88	PFIZER-SE
pH	8.410 S.U.	10/19/88	PFIZER-SE
pH	7.540 S.U.	07/05/88	PFIZER-SE
pH	7.960 S.U.	07/12/88	PFIZER-SE
pH	8.340 S.U.	07/21/88	PFIZER-SE
pH	9.000 S.U.	07/27/88	PFIZER-SE
pH	10.400 S.U.	04/19/89	PFIZER-SW
pH	7.600 S.U.	03/21/89	PFIZER-SW
pH	7.800 S.U.	02/27/89	PFIZER-SW
pH	12.150 S.U.	12/09/88	PFIZER-SW
pH	7.240 S.U.	12/15/88	PFIZER-SW
pH	8.490 S.U.	12/20/88	PFIZER-SW
pH	7.480 S.U.	12/28/88	PFIZER-SW
pH	7.380 S.U.	10/03/88	PFIZER-SW
pH	7.760 S.U.	10/12/88	PFIZER-SW
pH	6.910 S.U.	10/19/88	PFIZER-SW
pH	7.070 S.U.	07/05/88	PFIZER-SW
pH	6.660 S.U.	07/12/88	PFIZER-SW
pH	7.920 S.U.	07/21/88	PFIZER-SW
pH	7.400 S.U.	07/27/88	PFIZER-SW
pH	8.600 S.U.	04/12/89	ROGERS CARTAGE
pH	8.600 S.U.	03/15/89	ROGERS CARTAGE
pH	5.710 S.U.	11/25/88	ROGERS CARTAGE
pH	8.700 S.U.	11/27/88	ROGERS CARTAGE
pH	8.100 S.U.	11/28/88	ROGERS CARTAGE
pH	12.270 S.U.	11/29/88	ROGERS CARTAGE
pH	2.200 S.U.	11/30/88	ROGERS CARTAGE
pH	10.730 S.U.	01/26/89	ROGERS CARTAGE
pH	11.020 S.U.	01/27/89	ROGERS CARTAGE
pH	8.600 S.U.	01/28/89	ROGERS CARTAGE
pH	12.700 S.U.	01/30/89	ROGERS CARTAGE
pH	8.720 S.U.	01/31/89	ROGERS CARTAGE
pH	7.390 S.U.	02/01/89	ROGERS CARTAGE
pH	11.060 S.U.	02/02/89	ROGERS CARTAGE
pH	2.570 S.U.	02/03/89	ROGERS CARTAGE
pH	3.930 S.U.	02/04/89	ROGERS CARTAGE
pH	2.960 S.U.	02/08/89	ROGERS CARTAGE
pH	9.250 S.U.	02/09/89	ROGERS CARTAGE
pH	7.600 S.U.	02/10/89	ROGERS CARTAGE
pH	6.470 S.U.	02/13/89	ROGERS CARTAGE
pH	9.540 S.U.	02/14/89	ROGERS CARTAGE
pH	7.400 S.U.	02/16/89	ROGERS CARTAGE
pH	2.200 S.U.	02/17/89	ROGERS CARTAGE
pH	7.290 S.U.	02/19/89	ROGERS CARTAGE
pH	10.190 S.U.	02/20/89	ROGERS CARTAGE
pH	8.800 S.U.	03/17/89	ROGERS CARTAGE
pH	8.030 S.U.	03/18/89	ROGERS CARTAGE
pH	2.750 S.U.	03/20/89	ROGERS CARTAGE
pH	2.290 S.U.	03/21/89	ROGERS CARTAGE
pH	2.650 S.U.	03/22/89	ROGERS CARTAGE
pH	4.600 S.U.	03/23/89	ROGERS CARTAGE
pH	6.400 S.U.	03/24/89	ROGERS CARTAGE
pH	7.100 S.U.	03/25/89	ROGERS CARTAGE
pH	8.810 S.U.	03/27/89	ROGERS CARTAGE
pH	13.550 S.U.	03/28/89	ROGERS CARTAGE
pH	10.700 S.U.	03/29/89	ROGERS CARTAGE
pH	9.300 S.U.	03/30/89	ROGERS CARTAGE
pH	9.000 S.U.	03/31/89	ROGERS CARTAGE
pH	8.770 S.U.	04/01/89	ROGERS CARTAGE

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX F
RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
pH	11.170 S.U.	04/04/89	ROGERS CARTAGE
pH	8.030 S.U.	07/27/88	ROGERS CARTAGE
pH	8.610 S.U.	07/31/88	ROGERS CARTAGE
pH	9.180 S.U.	08/02/88	ROGERS CARTAGE
pH	8.620 S.U.	08/06/88	ROGERS CARTAGE
pH	7.140 S.U.	08/10/88	ROGERS CARTAGE
pH	7.660 S.U.	08/14/88	ROGERS CARTAGE
pH	11.930 S.U.	08/16/88	ROGERS CARTAGE
pH	7.700 S.U.	08/20/88	ROGERS CARTAGE
pH	7.400 S.U.	04/05/89	ROGERS CARTAGE
pH	8.210 S.U.	04/06/89	ROGERS CARTAGE
pH	8.830 S.U.	04/07/89	ROGERS CARTAGE
pH	11.590 S.U.	04/08/89	ROGERS CARTAGE
pH	11.620 S.U.	04/10/89	ROGERS CARTAGE
pH	3.610 S.U.	04/12/89	ROGERS CARTAGE
pH	7.590 S.U.	04/13/89	ROGERS CARTAGE
pH	10.390 S.U.	04/14/89	ROGERS CARTAGE
pH	7.790 S.U.	04/16/89	ROGERS CARTAGE
pH	8.060 S.U.	04/17/89	ROGERS CARTAGE
pH	8.560 S.U.	04/18/89	ROGERS CARTAGE
pH	7.740 S.U.	04/19/89	ROGERS CARTAGE
pH	6.930 S.U.	04/20/89	ROGERS CARTAGE
pH	11.290 S.U.	04/21/89	ROGERS CARTAGE
pH	9.870 S.U.	04/22/89	ROGERS CARTAGE
pH	11.870 S.U.	04/24/89	ROGERS CARTAGE
pH	6.960 S.U.	04/25/89	ROGERS CARTAGE
pH	6.970 S.U.	04/26/89	ROGERS CARTAGE
pH	8.260 S.U.	04/27/89	ROGERS CARTAGE
pH	7.500 S.U.	04/28/89	ROGERS CARTAGE
pH	7.710 S.U.	04/30/89	ROGERS CARTAGE
pH	11.040 S.U.	05/01/89	ROGERS CARTAGE
pH	8.440 S.U.	05/02/89	ROGERS CARTAGE
pH	9.150 S.U.	05/03/89	ROGERS CARTAGE
pH	3.250 S.U.	05/04/89	ROGERS CARTAGE
pH	9.970 S.U.	05/05/89	ROGERS CARTAGE
pH	7.490 S.U.	05/07/89	ROGERS CARTAGE
pH	0.800 S.U.	05/08/89	ROGERS CARTAGE
pH	11.440 S.U.	05/09/89	ROGERS CARTAGE
pH	10.150 S.U.	05/10/89	ROGERS CARTAGE
pH	5.750 S.U.	05/11/89	ROGERS CARTAGE
pH	10.090 S.U.	05/12/89	ROGERS CARTAGE
pH	7.360 S.U.	05/14/89	ROGERS CARTAGE
pH	5.990 S.U.	05/15/89	ROGERS CARTAGE
pH	10.350 S.U.	05/16/89	ROGERS CARTAGE
pH	6.200 S.U.	05/17/89	ROGERS CARTAGE
pH	12.400 S.U.	05/18/89	ROGERS CARTAGE
pH	7.630 S.U.	05/21/89	ROGERS CARTAGE
pH	12.920 S.U.	05/22/89	ROGERS CARTAGE
pH	12.190 S.U.	05/23/89	ROGERS CARTAGE
pH	9.760 S.U.	05/24/89	ROGERS CARTAGE
pH	10.440 S.U.	05/25/89	ROGERS CARTAGE
pH	8.780 S.U.	05/26/89	ROGERS CARTAGE
pH	10.430 S.U.	05/30/89	ROGERS CARTAGE
pH	10.100 S.U.	05/31/89	ROGERS CARTAGE
pH	3.370 S.U.	06/01/89	ROGERS CARTAGE
pH	11.900 S.U.	06/02/89	ROGERS CARTAGE
pH	7.790 S.U.	06/04/89	ROGERS CARTAGE
pH	7.490 S.U.	06/05/89	ROGERS CARTAGE
pH	10.710 S.U.	06/06/89	ROGERS CARTAGE
pH	9.6[illegible]0 S.U.	06/07/89	ROGERS CARTAGE
pH	12.740 S.U.	06/08/89	ROGERS CARTAGE
pH	6.510 S.U.	06/09/89	ROGERS CARTAGE
pH	9.540 S.U.	06/11/89	ROGERS CARTAGE

CER 055703

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
pH	12.840 S.U.	06/12/89	ROGERS CARTAGE
pH	9.890 S.U.	06/13/89	ROGERS CARTAGE
pH	4.120 S.U.	06/14/89	ROGERS CARTAGE
pH	12.130 S.U.	06/15/89	ROGERS CARTAGE
pH	10.050 S.U.	06/16/89	ROGERS CARTAGE
pH	12.400 S.U.	04/12/89	TRADE WASTE
pH	12.600 S.U.	03/15/89	TRADE WASTE
pH	8.950 S.U.	07/27/88	TRADE WASTE
pH	8.060 S.U.	07/31/88	TRADE WASTE
pH	7.570 S.U.	08/02/88	TRADE WASTE
pH	5.440 S.U.	08/06/88	TRADE WASTE
pH	10.020 S.U.	08/10/88	TRADE WASTE
pH	7.870 S.U.	08/14/88	TRADE WASTE
pH	7.560 S.U.	08/16/88	TRADE WASTE
pH	8.180 S.U.	08/20/88	TRADE WASTE
pH (avg)(1)	6.180 S.U.	04/89	BIG RIVER
pH (avg)(1)	7.570 S.U.	05/89	BIG RIVER
pH (avg)(1)	6.640 S.U.	04/89	CERRO-EAST
pH (avg)(1)	7.310 S.U.	05/89	CERRO-EAST
pH (avg)(1)	7.870 S.U.	04/89	CERRO-WEST
pH (avg)(1)	7.930 S.U.	05/89	CERRO-WEST
pH (avg)(1)	10.450 S.U.	04/89	CLAYTON
pH (avg)(1)	10.400 S.U.	05/89	CLAYTON
pH (avg)(1)	1.560 S.U.	04/89	ETHYL
pH (avg)(1)	1.590 S.U.	05/89	ETHYL
pH (avg)(1)	7.820 S.U.	04/89	MIDWEST RUBBER
pH (avg)(1)	7.740 S.U.	05/89	MIDWEST RUBBER
pH (avg)(1)	1.800 S.U.	04/89	MONSANTO
pH (avg)(1)	1.610 S.U.	05/89	MONSANTO
pH (avg)(1)	8.600 S.U.	05/89	PFIZER-SE
pH (avg)(1)	8.800 S.U.	04/89	PFIZER-SE
pH (avg)(1)	8.700 S.U.	03/89	PFIZER-SE
pH (avg)(1)	8.700 S.U.	02/89	PFIZER-SE
pH (avg)(1)	8.600 S.U.	01/89	PFIZER-SE
pH (avg)(1)	8.800 S.U.	12/88	PFIZER-SE
pH (avg)(1)	8.800 S.U.	11/88	PFIZER-SE
pH (avg)(1)	8.800 S.U.	10/88	PFIZER-SE
pH (avg)(1)	8.700 S.U.	09/88	PFIZER-SE
pH (avg)(1)	8.700 S.U.	08/88	PFIZER-SE
pH (avg)(1)	8.700 S.U.	07/88	PFIZER-SE
pH (avg)(1)	8.500 S.U.	06/88	PFIZER-SE
pH (avg)(1)	8.200 S.U.	05/88	PFIZER-SE
pH (avg)(1)	7.600 S.U.	04/88	PFIZER-SE
pH (avg)(1)	6.200 S.U.	03/88	PFIZER-SE
pH (avg)(1)	6.600 S.U.	02/88	PFIZER-SE
pH (avg)(1)	9.400 S.U.	05/89	PFIZER-SW
pH (avg)(1)	9.700 S.U.	04/89	PFIZER-SW
pH (avg)(1)	8.500 S.U.	03/89	PFIZER-SW
pH (avg)(1)	8.400 S.U.	02/89	PFIZER-SW
pH (avg)(1)	8.100 S.U.	01/89	PFIZER-SW
pH (avg)(1)	8.300 S.U.	12/88	PFIZER-SW
pH (avg)(1)	7.800 S.U.	11/88	PFIZER-SW
pH (avg)(1)	8.300 S.U.	10/88	PFIZER-SW

APPENDIX F

RESULTS OF POTW RANDOM SAMPLING

PARAMETER	CONCENTRATION	SAMPLING DATE	INDUSTRY
pH (avg)(1)	8.100 S.U.	09/88	PFIZER-SW
pH (avg)(1)	8.000 S.U.	08/88	PFIZER-SW
pH (avg)(1)	8.100 S.U.	07/88	PFIZER-SW
pH (avg)(1)	7.900 S.U.	06/88	PFIZER-SW
pH (avg)(1)	8.100 S.U.	05/88	PFIZER-SW
pH (avg)(1)	7.900 S.U.	04/88	PFIZER-SW
pH (avg)(1)	7.600 S.U.	03/88	PFIZER-SW
pH (avg)(1)	7.600 S.U.	02/88	PFIZER-SW
pH (avg)(1)	8.050 S.U.	04/89	ROGERS CARTAGE
pH (avg)(1)	8.010 S.U.	05/89	ROGERS CARTAGE
pH (avg)(1)	7.510 S.U.	04/89	TRADE WASTE
pH (avg)(1)	7.370 S.U.	05/89	TRADE WASTE

NOTE:

(1) Data identified as average (avg) is the average value of multiple data for the given month and industry.

CER 055705

APPENDIX G

LEVELS OF TOXICITY TO, AND BIOACCUMULATIVE POTENTIAL IN, AQUATIC ORGANISMS FOR COMPOUNDS IDENTIFIED IN AMERICAN BOTTOMS INFLUENT & EFFLUENT

(Prepared by EA Engineering, Science, and Technology, Inc.)

CER 055706

LEVELS OF TOXICITY TO, AND BIOACCUMULATIVE POTENTIAL IN, AQUATIC ORGANISMS FOR COMPOUNDS IDENTIFIED IN AMERICAN BOTTOMS INFLUENT AND EFFLUENT

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CER 055707

22 December 1989

EA Project 11085.01

Introduction

A database consisting of approximately 12 months of analytical chemistry data (May 1988 to April 1989) for 11 different sampling locations has been developed for the American Bottoms Regional Wastewater Treatment Facility (ABRWTF). This data was developed by Gulf Coast Laboratories, Inc. (for Horner and Shifrin, Inc.) for use in the development of a pretreatment program. These data include priority pollutant determinations as well as analyses for specific non-priority and conventional pollutants and computer database searches for unknown peaks identified during the GC/MS scans.

The objective of this data evaluation was to identify water quality criteria, or approximate toxicity endpoints for those compounds that have been identified in the ABRWTF final effluent. It is important to note that this evaluation was conducted independently of the Data Evaluation for Treatment Plant Analyses. This study develops toxicity endpoints or identifies appropriate criteria for all compounds that may be present in the ABRWTF final effluent as opposed to only those compounds of concern identified in the Data Evaluation for Treatment Plant Analyses. These data can then be used by Horner and Shifrin in the pretreatment program development.

Identification of Toxicity Data

A data search was performed to identify appropriate toxicity endpoints or criteria for compounds identified in ABRWTF effluent and/or P-Chem Plant influent. A data search was not performed for compounds identified in the ABRWTF influent due to the fact that this influent flow is primarily composed of domestic wastewaters. With the exception of several conventional and non-conventional pollutants (e.g., BOD, TSS, pH etc.), an attempt was made to gather aquatic toxicity data on all compounds identified in the ABRWTF effluent and/or P-Chem Plant influent. This data search was primarily limited to 1) data on freshwater species of fish [however, other freshwater data (e.g., algae, macroinvertebrates etc.) were also considered], 2) Federal Water Quality Criteria and 3) data from standard aquatic toxicity tests (i.e.,48- or 96-hour acute tests, 7-day chronic tests).

CER 055708

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Further, the available data on a specific compound were prioritized with the Federal Water Quality Criteria being the data of choice, followed by the Federal Lowest Observable Effect Concentrations (LOEC). When this infomation was not avaliable, other toxicity data (e.g., LC50s or NOECs) were used as appropriate. Sources of toxicity information evaluated for this task were:

- U.S. EPA Quality Criteria for Water 1986 (U.S. EPA 1986)
- Acute Toxicity of Organic Chemicals to Fathead Minnow (Pimephales promelas) Volumes 1-3. (Univ. Wisconsin 1984-86)
- Aquatic Information Retrieval (ACQUIRE) Computer Database (U.S. EPA 1987)
- Handbook of Environmental Data on Organic Chemicals (Verschueren 1983)

The results of this data search are summarized in Table 1. At least one toxicity test and/or water quality criteria were identified for every compound with the exception of the following 10 compounds: barium, benzofuran, cineole, ethoxybenzenamine, heptylnonylbenzene, 2-methylnaphthalene, 2-nitroaniline, 1-methyl-4-(1-methylethyl)-7- oxabicyclo[2.2.1]heptane, phenyl-formamide, and propynylbenzene.

Calculation of Estimated Lowest Effect Levels

Of the compounds identified in the P-Chem influent and/or ABRWTF effluent, 20 compounds have established U.S. EPA water quality criteria (1986), 25 compounds have established lowest observed effect levels (LOELs) (U.S. EPA 1986), and 20 have at least one acute or chronic toxicity data point. As noted above, 10 compounds had no available toxicity data, thus, an estimated lowest effect level could not be calculated for these compounds. For the 20 compounds with at least one toxicity data point, estimated lowest acute and chronic levels were calculated.

CER 055709

U.S EPA's "Guidance for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses" (Stephan et al. 1985) describes the methodology used to calculate the National water quality criteria. For the development of a freshwater acute water quality criterion, U.S. EPA requires the results of acceptable acute tests with at least one species of freshwater animal in at least eight different families. Because the National Guidelines methodology does not recommend establishing a criterion when the chemical-specific minimum dataset requirements have not been met, the approach employed to calculate an estimated lowest effect level involves the use of "uncertainty factors" (UF). U.S. EPA (1985) has identified several uncertainty factors for use in evaluating the instream toxicity effects from the discharge of complex effluents to receiving waters. In the Technical Support Document for Water Quality-Based Toxics Control (U.S. EPA 1985), the Agency recommends using a factor of 10 to account for differences in species sensitivity, and a second factor of 10 to account for differences between acute and chronic effect levels. It is important to note that these uncertainty factors were based on whole effluent toxicity testing and not single chemical testing. Although for several compounds toxicity data is available for more than three species, no effort was made to assess compliance with the National Guideline's minimum database requirements (Stephan et al. 1985) or determine the quality of the test data evaluated. Therefore, the uncertainty factor of 10 to account for differences in species sensitivity and/or test quality was used to determine the estimated lowest acute effect level for all chemicals that did not have an EPA established criterion or lowest observed effect levels.

For this data evaluation, an uncertainty factor of 10 was used to determine an estimated lowest acute effect level from an acute toxicity data point (i.e., LC50 divided by 10). An uncertainty factor of 100 (10 for species sensitivity x 10 for acute to chronic toxicity) was used to determine an estimated lowest chronic effect level from an acute toxicity data point (i.e., LC50 divided by 100). Because there was usually more acute toxicity data than chronic toxicity data for any given compound, acute toxicity data were generally used to calculate both acute and chronic effect levels. However, when chronic toxicity data were available for a specific chemical, these data were compared to corresponding acute toxicity data adjusted by the appropriate uncertainty factors. The lower of these two toxicity values (i.e., chronic toxicity data or LC50 divided by 100) was used as the Recommended Instream Concentration (Table 2). The uncertainty factors used in this evaluation are reasonable and are not believed to be underprotective or overly conservative. It is important to note that no attempt was made to compare these data to background levels in the receiving water or to standard analytical detection limits.

The lowest toxicity levels for the 20 compounds with identified toxicity data are presented in Table 2. With the exception of boron, these effect levels were primarily 24-, 48-, or 96-hour LC50 values. However, due to the small amount of available data, several 7-day LC50 values were used as well. The lowest toxicity levels identified in the literature were adjusted by the appropriate uncertainty factor to calculate estimated lowest acute (UF = 10) or chronic effect levels (UF = 100). For boron, the only toxicity level identified was a maximum acceptable toxicant concentration (MATC) derived during a chronic (21 day) study. This value was considered protective of acute toxicity and therefore, no uncertainty factor was used. However, to account for differences in species sensitivity, the MATC was divided by a factor of 10 to estimate a lowest chronic effect level.

The estimated lowest acute and chronic effect levels derived from the lowest toxicity level and U.S. EPA LOEL or water quality criteria are summarized in Table 3. These values are the recommended end-of-pipe or edge of the Zone-of-Initial-Dilution concentrations for use in developing local limits. For those water quality criteria which are hardness dependent, a hardness value of 200 mg/L as $CaCO_3$ (the long-term hardness of the Mississippi River) was used.

CER 055711

Evaluation of Bioaccumulative Potential

U.S. EPA (1985) recommends that potentially hazardous, bioaccumulative pollutants be regulated in effluents to protect human health. Specifically, U.S. EPA (1985) recommends "that any compound for which the logarithm of the partition coefficient (log P) is greater than 3.5 be flagged for further evaluation and possible control" (p. 28). Further, using an equation developed by Veith et al. (1979), a log P value of 3.5 is approximately equivalent to a bioconcentration factor (BCF) of 188.

In order to evaluate the bioaccumulative potential of compounds in the ABRWTF effluent, a data search was conducted to identify log P or BCF values for compounds identified in the P-Chem Plant influent and ABRWTF effluent. Sources of information used for this evaluation were:

- U.S. EPA Water Quality Criteria Documents
- Aquatic Information Retrieval (ACQUIRE) Computer Database (U.S. EPA 1987)
- Handbook of Environmental Data on Organic Chemicals (Verschueren 1983)
- Bioaccumulation Monitoring Guidance (Tetra Tech 1985)
- Partition Coefficients and Their Uses (Leo et al. 1971)
- Relationship Between Octanol-Water Partition Coefficients and Aqueous Solubility (Miller et al. 1985)

A summary of all identified log P and BCF values is presented in Table 1. The chemical-specific log P and BCF values used to identify those compounds which are potentially bioaccumulative are presented in Table 4. BCF values were primarily obtained from the U.S. EPA Criteria Documents. For those compounds in which U.S. EPA had developed a human health-based criterion, the mean BCF or lipid normalized BCF developed by EPA was used. For all other compounds, the BCF presented in Table 4 is the geometric mean BCF of all species mean BCF values. The objective of this study was to focus on freshwater species only, however, when the database was limited, BCF values for both marine and freshwater species were evaluated.

Table 5 lists those compounds in which either the log P is greater than 3.5 or the BCF is greater than 188. Because this evaluation of bioaccumulative potential was conducted to identify those compounds which may present human health risks, the levels of each compound in the final effluent were compared to human health-based criteria for fish and/or water consumption. Of the compounds evaluated, only BHC, manganese and silver exceeded these criteria at least once in the final effluent without consideration of the extent of effluent dilution in the receiving water. However, the average concentration of both BHC and silver are below the human health-based criterion.

It is important to note that EPA's Technical Support Document (1985) recommends using a design flow of 30Q5 for setting human health-based permit limits. Thus, it is not appropriate to directly compare human health-based water quality criteria to levels of compounds observed in a final effluent. Dilution of the effluent in the river design flow of 30Q5 or lower (i.e., 7Q10) should be considered. Therefore, based on the extensive dilution of the ABRWTF effluent in the Mississippi, neither BHC, manganese nor silver are expected to be problematic with regards to bioaccumulation from the ambient waters.

<u>Literature Cited</u>

Leo A., C. Hansch, D. Elkins. 1971. Partition Coefficients and Their Uses. Chemical Reviews 71:525-616.

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Miller M.M., S.P. Waslk, G. Huang, W. Shiu and D. Mackay. 1985. Relationship Between Octanol-Water Partition Coefficients and Aqueous Solubility. Environmental Science and Technology 19:522-529.

Stephan, C.E., D.I. Mount, D.J. Hansen, J.H. Gentile, G.A. Chapman and W.A. Brungs. 1985. Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses. U.S. EPA, Washington DC, NTIS No. PB85-227049.

Tetra Tech, Inc. 1985. Bioaccumulation Monitoring Guidance: 1. Estimating the Potential for Bioaccumulation of Priority Pollutants and 301(h) Pesticides Discharged into Marine and Estuarine Waters. Final Report. EPA Contract No. 68-01-6938.

U.S. Environmental Protection Agency. 1986. Quality Criteria for Water 1986. Office of Water. Washington DC EPA 440/5-86-001.

U.S. Environmental Protection Agency. 1985. Technical Support Document for Water Quality-Based Toxics Control. Office of Water. Washington DC EPA 440/4-85-032.

U.S. Environmental Protection Agency. 1987. Aquatic Information Retrieval System (ACQUIRE). Chemical Information Service.

University of Wisconsin - Superior. 1984-1986. Acute toxicity of organic chemicals to Fathead Minnows (Pimephales promelas). Center for Lake Superior Environmental Studies. Volumes 1, 2 and 3.

Verschueren, K. 1983. Handbook of Environmental Data on Organic Chemicals. Second Edition. Van Nostrand Reinhold Company. New York. 1300 pages.

Veith, G., N. Austin, and R. Morris. 1979. A Rapid Method for Estimating Log P for Organic Chemicals. Water Res. 13:43-47.

TABLE 1. LEVELS OF TOXICITY IDENTIFIED IN THE LITERATURE

Compound	CAS	Organism (a)	EXP DUR	Effect (b)	Value (c)	Source (d)	Comments
Acetone	67641	P. promelas	96 hrs	LC50	8.12 g/l	UW1	
		P. promelas	96 hrs	LC50	7.28 g/l	UW1	
		P. promelas	96 hrs	LC50	6.21 g/l	UW1	
		L. macrochirus	96 hrs	LC50	8.3 g/l	A	
		D. pulex	18 hrs	LC50	90.04 mg/l	A	
		D. magna	24-48 hrs	TLm	10 mg/l	V	
		G. affinis	24-96 hrs	TLm	13 g/l	V	
		C. auritus	24 hrs	LD50	5 g/l	V	
		P. reticulata	14 days	LD50	7.032 g/l	V	
				LogP	-0.24	V	
Alachlor	15972608	P. promelas	96 hrs	LC50	5 mg/l	UW3	
		D. pulex	48 hrs	EC50	10.4 mg/l	H	
		C. carpio	96 hrs	LC50	4.67 mg/l	A	
				LogP	6.32	ASTDR	
Aldrin	309002	D. pulex	48 hrs	LC50	28 mg/l	V	
		D. magna	24 hrs	LC50	30 ug/l	V	
		D. magna	48 hrs	LC50	28 ug/l	V	
		P. promelas	96 hrs	LC50	28 ug/l	V	
		S. gairdneri	96 hrs	LC50	17.7 ug/l	V	
		S. gairdneri	96 hrs	LC50	10 ug/l	V	
		S. gairdneri	96 hrs	LC50	36 ug/l	V	
		L. macrochirus	96 hrs	LC50	13 ug/l	V	
		L. macrochirus	96 hrs	LC50	260 ug/l	V	
		L. macrochirus	96 hrs	LC50	13 ug/l	V	
		L. gibbosus	96 hrs	LC50	20 ug/l	V	
			FW Acute	Crit	3 ug/l	GB	
				BCF	2385	WQC	Measured, Channel Catfish
				BCF	68286	WQC	Measured, Lake Trout
				BCF	1557	WQC	Lipid Normalized BCF
				LogP	3	ASTDR, TT	
				LogP	5.3	EPA1	
				t1/2	185 hrs		
Aniline	62533	P. promelas	96 hrs	LC50	134 mg/l	V	
		D. magna	48 hrs	LC50	360 ug/l	A	
		D. magna	48 hrs	LC50	350 ug/l	A	
		D. magna	48 hrs	LC50	630 to 680 ug/L	A	
		D. pulex	48 hrs	LC50	100 ug/l	A	
		D. cucullata	48 hrs	LC50	690 ug/l	A	
		D. cucullata	48 hrs	LC50	680 ug/l	A	

Compound	CAS	Organism (a)	EXP DUR	Effect (b)	Value (c)	Source (d)	Comments
		S. gairdneri	96 hrs	LC50	41000 ug/l	A	
		S. gairdneri	96 hrs	LC50	20000 ug/l	A	
		S. gairdneri	96 hrs	LC50	10600 ug/l	A	
				logP	0.90	V	
				BCF	6.02-10	Howard	
Arsenic				BCF	44	WQC	Average BCF
Pentavalent			FW Acute	LOEL	850 ug/l	GB	
			FW Chronic	LOEL	48 ug/l	GB	
Trivalent			FW Acute	Crit	360 ug/l	GB	
			FW Chronic	Crit	190 ug/l	GB	
Atrazine	1912249	C. tentans	48 hrs	LC50	720 ug/l	A	
		G. fasciatus	48 hrs	LC50	5700 ug/l	A	
		D. magna	48 hrs	LC50	3600 ug/l	A	
		D. magna	48 hrs	LC50	6900 ug/l	A	
		L. macrochirus	96 hrs	LC50	>8000 ug/l	A	
		L. macrochirus	96 hrs	LC50	15000 ug/l	A	
		L. macrochirus	96 hrs	LC50	16000 ug/l	A	
		L. macrochirus	48 hrs	LC50	80000 ug/l	A	
		L. macrochirus	96 hrs	LC50	50000 ug/l	A	
		P. promelas	96 hrs	LC50	15000 ug/l	A	
		S. fontinalis	96 hrs	LC50	6300 ug/l	A	
		S. fontinalis	96 hrs	LC50	4900 ug/l	A	
		S. gairdneri	48 hrs	LC50	10000 ug/l	A	
		S. gairdneri	48 hrs	LC50	10000 ug/l	A	
		S. gairdneri	48 hrs	LC50	30000 ug/l	A	
		S. gairdneri	96 hrs	LC50	8800 ug/l	A	
		S. gairdneri	96 hrs	LC50	17000 ug/l	A	
		C. carpio	48 hrs	LC50	>10000 ug/l	A	
		I. americus	48 hrs	LC50	8000 ug/l	A	
		I. americus	96 hrs	LC50	7600 ug/l	A	
		I. americus	96 hrs	LC50	35000 ug/l	A	
		P. reticulata	96 hrs	LC50	4300 ug/l	A	
		75-100 % soil disappearance			10 mo.	V	
				LogP	2.3-2.71	EPA2	
				BCF	2-83	V	
BHC		S. gairdneri		BCF	486	WQC	alpha-BHC = alpha-
		S. fontinalis		BCF	70	WQC	hexachlorocyclohexane
		P. promelas		BCF	477	WQC	
		L. macrochirus		BCF	35	WQC	

TABLE 1. LEVELS OF TOXICITY IDENTIFIED IN THE LITERATURE

Compound	CAS	Organism (a)	EXP DUR	Effect (b)	Value (c)	Source (d)	Comments
				BCF	339	WQC	
				BCF	130	WQC	Lipid Normalized BCF
				LogP	3.8	WQC	
			FW Acute	Crit	2.0 ug/l	GB	
			FW Chronic	Crit	0.06 ug/l	GB	
Barium				BCF	10	EPA2	No toxicity data
Benzene	71432		FW Acute	LOEL	5300 ug/l	GB	
				LogP	2.13	V	
				LogP	1.56-2.15	ASTDR	
				BCF	5.2	EPA2	
Benzofuran	271896			LogP	2.67	V	also called "Coumarone" No toxicity data
Beryllium			FW Acute	LOEL	130 ug/l	GB	
			FW Chronic	LOEL	5.3 ug/l	GB	
				BCF	19	EPA2	
Bis(2-ethyl-hexyl)Phthalate			FW Acute	LOEL	940 ug/l	GB	Regulated as a Phthalate Ester
			FW Chronic	LOEL	3 ug/l	GB	
		D. magna	48 hrs	LC50	11 mg/l	A	
		scud		BCF	54-2680	WQC	
		sowbug		BCF	14-50	WQC	
		trout		BCF	42-113	WQC	
		P. promelas		BCF	155-886	WQC	
		P. promelas		BCF	91-569	WQC	
				BCF	130	WQC	Lipid Normalized BCF
				LogP	4.88	ASTDR	
Boron		D. magna	21 days	MATC	9.3 mg/l	Gersich	
Bromodichloro-methane	75254		FW Acute	LOEL	11000 ug/l	GB	Regulated as a Halomethane
				LogP	1.88	TT	

TABLE 1. LEVELS OF TOXICITY IDENTIFIED IN THE LITERATURE

Compound	CAS	Organism (a)	EXP/DUR	Effect (b)	Value (c)	Source (d)	Comments
2-Butanone (methylethylketone)	78933	P. promelas	96 hrs	LC50	3220 mg/l	UW3	
		C. auritus	24 hrs	LD50	5000 mg/l	V	
		D. magna	48 hrs	LC50	>520 mg/l	A	
		L. macrochirus	48 hrs	LC50	5.64 g/l	A	
				LogP	0.26	V	
				BCF	0	EPA2	
Butoxyethoxy-ethanol (Diethylene glycol mono-n-butyl ether; Butyldiglycol)	112345	C. auritus	24 hrs	LD50	2.700 g/l	V	
		L. macrochirus	96 hrs	LC50	1.300 g/l	V	2(2-Butoxyethoxy)ethanol
		P. reticulata	7 days	LC50	1.150 g/l	A	
		L. idus		LC50	1.805 g/l	A	
		L. idus		LC50	2.304 g/l	A	
		D. magna	24 hrs	LC50	2.850 g/l	A	
				LogP	0.40	V	
Butylbenzyl-phthalate	85687	D. magna	48 hrs	EC50	3.7 mg/l	V	Regulated as a Phthalate Ester
		D. magna	48 hrs	NOEC	1.0 mg/l	V	
		P. promelas	96 hrs	LC50	2.1 to 5.3 mg/l	V	
		P. promelas	96 hrs	NOEC	1.0 to 2.2 mg/l	V	
		L. macrochirus	96 hrs	LC50	1.7 mg/l	V	
		L. macrochirus	96 hrs	NOEC	0.38 mg/l	V	
		S. gairdneri	96 hrs	LC50	3.3 mg/l	V	
		S. gairdneri	96 hrs	NOEC	<0.36 mg/l	V	
		L. macrochirus		BCF	663	V	
				BCF	414	WQC	Lipid Normalized BCF
				LogP	4.78	V	
				LogP	4.91	Howard	
				t1/2	< 2 days		
			FW Acute	LOEL	940 ug/l	GB	regulated as a Phthalate Ester
			FW Chronic	LOEL	3 ug/l	GB	
Cadmium			FW Acute	Crit	8.6 ug/l	GB	calculated at hardness = 200 mg/l (as CaCO3)
			FW Chronic	Crit	2.0 ug/l	GB	
				BCF	3-12400	WQC	Range for Freshwater organisms
				BCF	766	WQC	Average BCF
				BCF	81	EPA2	
				BCF	3000	EPA2	

TABLE 1. LEVELS OF TOXICITY IDENTIFIED IN THE LITERATURE

Compound	CAS	Organism (a)	EXP DUR	Effect (b)	Value (c)	Source (d)	Comments
Chlordane	57749		FW Acute	Crit	2.4 ug/l	GB	
			FW Chronic	Crit	0.0043 ug/l	GB	
				BCF	5200-37800	WQC	
				BCF	4702	WQC	Lipid Normalized BCF
				BCF	14000	EPA2	
				LogP	6.0	TT	
				LogP	3.32	EPA2	
Chloride (as NaCl)			FW Acute	Crit	860 mg/l	GB	Criteria are for NaCl; criteria may differ for other salts (e.g., KCl)
			FW Chronic	Crit	230 mg/l	GB	
Chlorine (total residual)			FW Acute	Crit	19 ug/l	GB	
			FW Chronic	Crit	11 ug/l	GB	
2-chloroaniline	95512	P. promelas	96 hrs	LC50	5.81 mg/l	UW1	
		P. promelas	96 hrs	LC50	5.68 mg/l	UW3	
				LogP	1.9	V	
				BCF	20-200	Howard	
4-chloroaniline	106478	S. gairdneri	96 hrs	LC50	14 mg/l	V and A	
		P. promelas	96 hrs	LC50	12 mg/l	V and A	
		I. punctatus	96 hrs	LC50	23 mg/l	V and A	
		L. macrochirus	96 hrs	LC50	2.4 mg/l	V and A	
				LogP	1.83	V	
				BCF	<20	Howard	
Chlorobenzene	108907		FW Acute	LOEL	250 ug/l	GB	Regulated as Chlorinated Benzenes
			FW Chronic	LOEL	50 ug/l	GB	
				LogP	2.84	V	
				LogP	2.49	WQC	
				BCF	26.1	WQC	Calculated
				BCF	10.3	WQC	Lipid Normalized BCF
				BCF	10-447	Howard	
Chloroform	67663		FW Acute	LOEL	28900 ug/l	GB	
			FW Chronic	LOEL	1240 ug/l	GB	

CER 055719

Compound	CAS	Organism (a)	EXP DUR	Effect (b)	Value (c)	Source (d)	Comments
				BCF	3.75	WQC	Lipid Normalized BCF
				LogP	1.97	V	
Chloronitrobenzene		P. promelas	96 hrs	LC50	18.8 mg/l	UW3	
		L. macrochirus	96 hrs	LC50	1.2 mg/l	V	
				BCF	20-288	Howard	
				BCF	7.1-219	Howard	
m-Chloronitrobenzene				LogP	2.41	V	
o-Chloronitrobenzene				LogP	2.24	V	
p-Chloronitrobenzene				LogP	2.39	V	
2-chlorophenol	95578		FW Acute	LOEL	4300 ug/l	GB	
			FW Chronic	LOEL	2000 ug/l	GB	
				LogP	2.15-2.19	V	
				BCF	214	WQC	
				t 1/2	<1 day		In tissue
Cineole	470826						also called "Eucalyptol" No toxicity data
Chromium				BCF	16	WQC	Weighted Average BCF
Trivalent Chromium			FW Acute	Crit	3100 ug/l	GB	calculated at hardness
			FW Chronic	Crit	370 ug/l	GB	= 200 mg/l (as CaCO3)
				BCF	130	WQC	
Hexavalent Chromium			FW Acute	Crit	16 ug/l	GB	
			FW Chronic	Crit	11 ug/l	GB	
				BCF	<1	WQC	
Copper			FW Acute	Crit	34 ug/l	GB	calculated at hardness
			FW Chronic	Crit	21 ug/l	GB	= 200 mg/l (as CaCO3)
				BCF	1-2000	WQC	Range for Freshwater organisms
				BCF	328	WQC	Geometric mean BCF

TABLE 1. LEVELS OF TOXICITY IDENTIFIED IN THE LITERATURE

Compound	CAS	Organism (a)	EXP DUR	Effect (b)	Value (c)	Source (d)	Comments
				BCF	200	EPA2	
Cyanides, total	57125		FW Acute	Crit	22 ug/l	GB	Bioaccumulation has not
			FW Chronic	Crit	5.2 ug/l	GB	been demonstrated
Di-n-butylphthalate	84742		FW Acute	LOEL	940 ug/l	GB	
			FW Chronic	LOEL	3 ug/l	GB	
		P. promelas	96 hrs	LC50	850 ug/l	UW2	
		P. promelas	96 hrs	LC50	1100 ug/l	UW2	
		cladoceran		BCF	400	WQC	
		scud		BCF	1400	WQC	
				BCF	748		Calculated mean
				LogP	5.15	TT	
				LogP	5.6	EPA1	
Dichlorobenzenes			FW Acute	LOEL	1120 ug/l	GB	
			FW Chronic	LOEL	763 ug/l	GB	
1,2-Dichlorobenzene	95501			LogP	3.38	V, EPA2, Howard	
				LogP	3.6	EPA1	
				BCF	55.6	WQC	Lipid Normalized BCF
				BCF	89	WQC	
				BCF	270-560	Howard	
1,3-Dichlorobenzene	541731			LogP	3.38	V, EPA2	
				LogP	3.6	EPA1, Howard	
				BCF	41.2	WQC	Lipid Normalized BCF
				BCF	66	WQC	
				BCF	420-740	Howard	
1,4-Dichlorobenzene	106467			LogP	3.39	V	
				LogP	3.52	Howard	
				LogP	3.6	EPA1	
				BCF	37.5	WQC	Lipid Normalized BCF
				BCF	60	WQC	
				BCF	370-720	Howard	
1,2-Dichloroethane	107062		FW Acute	LOEL	118000 ug/l	GB	Regulated as
			FW Chronic	LOEL	20000 ug/l	GB	Chlorinated Ethanes

CER 055721

Compound	CAS	Organism (a)	EXP DUR	Effect (b)	Value (c)	Source (d)	Comments
				LogP	1.45	TT	
				LogP	1.48	EPA2	
				BCF	1.2	WQC	Lipid Normalized BCF
				BCF	2	WQC	
2,4-Dichlorophenol	120832		FW Acute	LOEL	2020 ug/l	GB	
			FW Chronic	LOEL	365 ug/l	GB	
				LogP	3.19	WQC	
				LogP	2.9	EPA1	
				BCF	103	WQC	Measured
				BCF	41	WQC	Lipid Normalized BCF
2,4-Dimethylphenol	105679		FW Acute	LOEL	2120 ug/l	GB	
				LogP	2.42	TT	
				LogP	2.3	Howard	
				BCF	150	WQC	
				BCF	15	Howard	
2,4-Dinitrophenol	51285		FW Acute	LOEL	230 ug/l	GB	Regulated as
			FW Chronic	LOEL	150 ug/l	GB	Nitrophenols
		P. promelas	96 hrs	LC50	6.58-19.4 mg/l	UW2	
		S. Salar	lethal	threshold	700 ug/l	V	
				LogP	1.51-1.54	V	
				BCF	<10	Howard	
p,p'-DDT	50293		FW Acute	Crit	1.1 ug/l	GB	
(DDT as a group)			FW Chronic	Crit	0.001 ug/l	GB	
				LogP	6.19	WQC	
				BCF	200-40000	WQC	
				BCF	53600	WQC	Weighted Average BCF
2-Ethoxybenzenamine	94702						No toxicity data
4-Ethoxybenzenamine	156434						
Ethylbenzene	100414		FW Acute	LOEL	32000 ug/l	GB	

CER 055722

Compound	CAS	Organism (a)	EXP DUR	Effect (b)	Value (c)	Source (d)	Comments
				LogP	3.15	V	
				BCF	95	WQC	Measured
				BCF	37.5	WQC	Lipid Normalized BCF
Fluoride		D. magna	48 hrs	LC50	279 mg/l	Fieser	temp = 20 C
		D. magna	21 days	NOEC	25 mg/l	Fieser	
		S. trutta	48 hrs	LC50	125 mg/l	A	
		3 species	96 hrs	LC50	180-460 mg/l	JWPCF 86	Tested P. promelas, S. gairdneri and Stickleback
Heptachlor	76448		FW Acute	Crit	0.52 ug/l	GB	
			FW Chronic	Crit	0.0036 ug/l	GB	
		P. promelas		BCF	9500-14400	WQC	Range of BCFs
				BCF	11200	WQC	Lipid Normalized BCF
				LogP	4.4	EPA1	
Heptylnonylbenzene							No toxicity data
Iron			FW Acute	Crit		GB	
			FW Chronic	Crit	1000 ug/l	GB	
Lead			FW Acute	Crit	200 ug/l	GB	calculated at hardness = 200 mg/l (as CaCO3)
			FW Chronic	Crit	7.7 ug/l	GB	
				BCF	42-1700	WQC	Range of BCFs
				BCF	49	WQC	Lipid Normalized BCF
				BCF	1700	EPA2	
Manganese		Physa sp.		BCF	1300	A	No toxicity data
		Physa sp.		BCF	800	A	
		C. fluminea		BCF	470	A	
		C. fluminea		BCF	1800	A	
		C. fluminea		BCF	470	A	
		C. fluminea		BCF	2100	A	
		Plankton		BCF	690	A	
		Oligocheata sp.		BCF	88	A	
		Insecta		BCF	28	A	
		Fish		BCF	84	A	
		C. fluminea		BCF	155	A	
		C. fluminea		BCF	956	A	
		C. fluminea		BCF	132	A	

EPA/CERRO COPPER/EIL/PCB ATTORNEY WORK PRODUCT / ATTORNEY CLIENT PRIVILEGE

TABLE 1. LEVELS OF TOXICITY IDENTIFIED IN THE LITERATURE

Compound	CAS	Organism (a)	EXP DUR	Effect (b)	Value (c)	Source (d)	Comments
		C. fluminea		BCF	580	A	
		L. minor		BCF	10900	A	
				BCF	366		Calculated geometric mean
			Tolerance	1.5 to 1000 mg/l		AFS	
				Haz level	0.1 mg/l	AFS	
				Min Risk	0.02 mg/l	AFS	
Mercury			FW Acute	Crit	2.4 ug/l	GB	
			FW Chronic	Crit	0.012 ug/l	GB	
				BCF	250-6300	WQC	Range of BCFs
				BCF	3750	WQC	
Methylene Chloride	75092		FW Acute	LOEL	11000 ug/l	GB	Regulated as Halomethanes
				LogP	1.25	WQC	
				LogP	0.37	V	
				BCF	2.3	WQC	
				BCF	0.91	WQC	Lipid Normalized BCF
5-Methyl-2-hexanone	110123	P. promelas	96 hrs	LC50	159 mg/l	UW1	
2-Methylnapthalene	91576	S. gairdneri	24 hrs	BCF	2566	A	No toxicity data
		S. gairdneri	24 hrs	BCF	217.5	A	
		S. gairdneri	28 days	BCF	100-300	A	
		S. gairdneri	24 hrs	BCF	1600	A	
		S. gairdneri	28 days	BCF	23500	A	
		S. gairdneri	4 weeks	BCF	40-300	V	
		O. kisutch	2-6 weeks	BCF	28-190	V	
				LogP	3.86	Miller	
2-Methyl-2-Propanol	75650	P. promelas	96 hrs	LC50	6.41 g/l	UW3	
		S. atromacul.	24 hrs	LD0/LD100	3/6 g/l	V	
		P. reticulata	7 days	LC50	3.55 g/l	V	
		C. auritus	24 hrs	LC50	>5 g/l	A	
				LogP	0.37	V	
4-Methyl-2 Pentanone	108101	P. promelas	96 hrs	LC50	505 mg/l	UW1	
		P. promelas	96 hrs	LC50	540 mg/l	UW1	
		C. auritus	24 hrs	LD50	460 mg/l	V and A	

CER 055724

EPA/CERRO COPPER/EIL/PCB ATTORNEY WORK PRODUCT / ATTORNEY CLIENT PRIVILEGE

Compound	CAS	Organism (a)	EXP DUR	Effect (b)	Value (c)	Source (d)	Comments
Naphthalene	91203		FW Acute	LOEL	2300 ug/l	GB	
			FW Chronic	LOEL	280 ug/l	GB	
		trout		BCF	40-300	V	
				BCF	40-1000	Howard	
				BCF	10-1000	EPA2	
				LogP	3.45	V	
				LogP	3.3	Howard	
				LogP	3.37	EPA2	
Nickel			FW Acute	Crit	2500 ug/l	GB	calculated at hardness
			FW Chronic	Crit	620 ug/l	GB	= 200 mg/l (as CaCO3)
				BCF	9.8-100	WQC	Range BCFs
				BCF	47	WQC	Average BCF
Nitrobenzene	98953		FW Acute	LOEL	27000 ug/l	GB	
				LogP	1.85-1.88	WQC	
				LogP	1.85	Howard	
				BCF	<10-15	Howard	
2-nitroaniline	88744			LogP	1.44-1.83	V	No toxicity data
(o-nitroaniline)				LogP	1.34	Leo	
4-nitroaniline	100016	P. promelas	96 hrs	LC50	101.8 mg/l	A	
(p-nitroaniline)		D. magna	24 hrs	LC50	24 mg/l	V and A	
				LogP	1.83	V	
Nitrophenols			FW Acute	LOEL	230 ug/l	GB	
			FW Chronic	LOEL	150 ug/l	GB	
2-nitrophenol	88755			BCF	5.89	WQC	Estimated
				BCF	14	Howard	
				LogP	1.79	Howard	
				LogP	1.73	WQC	
3-nitrophenol				BCF	19	Howard	
				LogP	2	Howard	

CER 055725

Compound	CAS	Organism (a)	EXP DUR	Effect (b)	Value (c)	Source (d)	Comments
4-nitrophenol	10027			BCF	8.38	WQC	Estimated
				BCF	58-79	Howard	
				LogP	1.91	WQC	
N-Nitrosodiphenyl-amine	86306		FW Acute	LOEL	5850 ug/l	GB	Regulated as Nitrosamine
				BCF	217	WQC	Measured
				BCF	136	WQC	Lipid Normalized BCF
				LogP	3.13	TT	
1-methyl-4-(1-methylethyl)-7-oxabicyclo[2.2.1]heptane							No toxicity data
Phenol	108952		FW Acute	LOEL	10200 ug/l	GB	
			FW Chronic	LOEL	2560 ug/l	GB	
				LogP	1.46	V	
				BCF	1.2	WQC	Lipid Normalized BCF
				BCF	2.3	WQC	Measured
				BCF	1.9-218	Howard	
Phenyl-bicyclohexyl (trans-2-phenyl-1-cyclohexanol)		P. promelas	96 hrs	LC50	44.4 mg/l	UW2	
Phenyl-formamide (formanilide) (formylaniline)	103708						No toxicity data
Propynylbenzene				LogP	3.69	Miller	No toxicity data
Selenium			FW Acute	Crit	20 ug/l	GB	
			FW Chronic	Crit	5 ug/l	GB	
				BCF	16	WQC	Weighted Average

CER 055726

TABLE 1. LEVELS OF TOXICITY IDENTIFIED IN THE LITERATURE

Compound	CAS	Organism (a)	EXP DUR	Effect (b)	Value (c)	Source (d)	Comments
Silver			FW Acute	Crit	13 ug/l	GB	calculated at hardness
			FW Chronic	Crit	0.12 ug/l	GB	= 200 mg/l (as CaCO3)
				BCF	26	WQC	Geometric mean BCF, Freshwater species
				BCF	437	WQC	Geometric mean BCF, Marine and Freshwater species
1,2,4-Trichlorobenzene	120821		FW Acute	LOEL	250 ug/l	GB	Regulated as Chlorinated
			FW Chronic	LOEL	50 ug/l	GB	Benzenes
				BCF	182	WQC	
				BCF	2800	EPA2	
				LogP	4.23	V	
				t1/2	28 days		
1,1,1-Trichloroethane	71556		FW Acute	LOEL	18000 ug/l	GB	Regulated as Trichlorinated Ethanes
				BCF	9	WQC	
				BCF	5.6	EPA2	
				LogP	2.47	TT	
Toluene	108883		FW Acute	LOEL	17500 ug/l	GB	
				LogP	2.69	V	
				LogP	2.73	EPA2	
				BCF	10.7	EPA2	
Xylenes							
o-xylene	95476	C. auritus	24 hrs	LD50	13 mg/l	V	
		S. gairdneri	96 hrs	LD50	13.5 mg/l	V	
		P. promelas	96 hrs	LC50	42 mg/l	V	
				LogP	2.77	V	
				LogP	2.95	EPA2	
m-xylene	108383	P. reticulata	14 days	LC50	38 mg/l	V	
		C. auritus	24 hrs	LC50	16 mg/l	V	
		M. saxatilis	96 hrs	LC50	9.2 mg/l	V	
				LogP	3.20	V	
				LogP	3.26	EPA2	

Compound	CAS	Organism (a)	EXP DUR	Effect (b)	Value (c)	Source (d)	Comments
p-xylene	106423	P. reticulata	7 days	LC50	35 mg/l	V	
		M. saxatilis	96 hrs	LC50	2 mg/l	V	
		P. promelas	96 hrs	LC50	28.8 mg/l	V	
		P. promelas	96 hrs	LC50	8.87 mg/l	UW3	
				LogP	3.15	V	
Zinc			FW Acute	Crit	210 ug/l	GB	calculated at hardness
			FW Chronic	Crit	190 ug/l	GB	= 200 mg/l (as CaCO3)
				BCF	51-1130	WQC	Range Freshwater organisms
				BCF	651	WQC	Geometric mean BCF
				BCF	47-40000	EPA2	

(a)
P. promelas = fathead minnow
L. macrochirus = bluegill sunfish
L. gibbosus = pupkinseed sunfish
C. carpio = carp
G. affinis = mosquito fish
C. auritus = goldfish
P. reticulata = guppy
D. pulex, D. magna, D. cucullata = water fleas
S. gairdneri = rainbow trout
S. fontinalis, S. trutta = brook trout
C. tentans = midge
G. fasciatus = crustacean
I. americus = catfish
L. idus = silver orfe, ide
S. salar = atlantic salmon
Physa = snail
C. fluminea = asiatic clam
L. minor = duckweed
S. atromacul. = creek chub
O. kisutch = coho salmon
M. saxitilis = striped bass
Oligochaeta = annelid worm

(b) Definitions
LC50 - Lethal Concentration. Concentration lethal to 50 percent of the exposed population.
TLm - Median Tolerance Limit. Concentration at which 50 percent of the exposed population survives.
LD50 - Lethal Dose. Dose which is lethal to 50 percent of the exposed population.
EC50 - Effect Concentration. Concentration which produces an effect on 50 percent of the exposed population.
LogP - Logarithm of the octanol-water partition coefficient.
t1/2 - Half-life of the compound in water.
BCF - Bioconcentration factor.
LOEL - Lowest Observable Effect Level.
NOEC - No Observable Effect Concentration.
MATC - Maximum Acceptable Toxicant Concentration.
Crit - U.S. EPA Water Quality Criteria.

(c)
Note that effect levels are presented in different units ranging from ug to g/l

(d) Literature Cited

UW 1, 2, 3: University of Wisconsin-Superior. 1984-86. Acute toxicity of organic chemicals to Fathead Minnows (Pimephales promelas). Center for Lake Superior Environmental Studies. Volumes 1, 2 and 3.

A: Aquatic Information Retrieval (ACQUIRE). 1987. Chemical Information Systems

V: Verschueren, K. 1983. Handbook of Environmental Data on Organic Chemicals. Second Edition. Van Nostrand Reinhold Company. New York. 1300 pp.

GB: U.S. EPA. 1987. Quality Criteria for Water 1986. Office of Water. Washington D.C. EPA 440/5-86-001.

WQC: Water Quality Criterion Documents.

Fieser, A.H., J.L. Sykora, M.S. Kostalos, Y.C. Wu and D.W. Weyel. 1986. Effect of fluorides on survival and reproduction of Daphnia magna. Journal WPCF 58:82-86.

JWPCF 86: Stephan, C.E., D.C. Spehan, T.H. Roush, G.L. Phipps, Q.H. Pickering. 1986. Effects of pollution on freshwater organisms. Journal WPCF 58:645-671.

AFS: American Fisheries Society. 1979. A Review of the EPA Red Book: Quality Criteria for Water. Thurston, R.V., R.C. Russo, C.M. Fetterolf, T.A. Edsall and Y.M. Barber editors. Bethesda, Maryland. 313 pages.

TT: Tetra Tech, Inc. 1985. Bioaccumulation Monitoring Guidance: 1. Estimating the Potential for Bioaccumulation of Priority Pollutants and 301(h) Pesticides Discharged into Marine and Estuarine Waters. Final Report. EPA Contract No. 68-01-6938

Leo: Leo A., C. Hansch and D. Elkins. 1971. Partition Coefficients and Their Uses. Chemical Reviews 71:526-616.

Miller: Miller M.M., S.P. Waslk, G. Huang, W. Shiu and D. Mackay. 1985. Relationship between Octanol-Water Partition Coefficient and Aqueous Solubility. Environmental Science and Technology 19:522-529.

EPA1: U.S. EPA. 1982. Aquatic Fate Processes for Organic Priority Pollutants. Office of Water, Washington DC. EPA 440/4-81-014.

EPA2: Values from: OWSER Superfund Public Health Evaluation Manual, Office of Drinking Water Health Advisories for..., or/and Office of Water Planning and Standards Water Related Environmental Fate of 129 Priority Pollutants

Howard: Howard, P.H. 1989. Handbook of Environmental Fate and Exposure Data for Organic Chemicals, Volume 1. Lewis Publishers.

ASTDR: Agency for Toxic Substances and Disease Registry. 1987-1989. Toxicological Profiles for.... (30 Chemicals).

Compound	CAS	Organism (a)	EXP DUR	Effect	Value (b)
Acetone	67641	D. magna	24-48 hrs	TLm	10 mg/l
Alachlor	15972608	P. promelas	96 hrs	LC50	5 mg/l
Aniline	62533	D. pulex	48 hrs	LC50	100 ug/l
Atrazine	1912249	C. tentans	48 hrs	LC50	720 ug/l
Boron		D. magna	21 days	MATC	9.3 mg/l
2-Butanone (methylethylketone)	78933	P. promelas	96 hrs	LC50	3220 mg/l
Butoxyethoxy-ethanol	112345	P. reticulata	7 days	LC50	1.150 g/l
4-chloroaniline	106478	L. macrochirus	96 hrs	LC50	2.4 mg/l
2-chloroaniline	95512	P. promelas	96 hrs	LC50	5.68 mg/l
Chloronitrobenzene		L. macrochirus	96 hrs	LC50	1.2 mg/l
Fluoride		S. trutta	48 hrs	LC50	125 mg/l
Manganese				Haz level Min risk	0.1 mg/l 0.02 mg/l
2-Methyl-2-Propanol	75650	P. reticulata	7 days	LC50	3.55 g/l
4-Methyl-2-Pentanone	108101	C. auritus	24 hrs	LD50	460 mg/l
5-Methyl-2-hexanone	110123	P. promelas	96 hrs	LC50	159 mg/l
4-nitroaniline (p-nitroaniline)	100016	D. magna	24 hrs	LC50	24 mg/l
Phenyl-bicyclohexyl (trans-2-phenyl-1-cyclohexanol)		P. promelas	96 hrs	LC50	44.4 mg/l
o-xylene	95476	C. auritus	24 hrs	LD50	13 mg/l
m-xylene	108383	M. saxatilis	96 hrs	LC50	9.2 mg/l
p-xylene	106423	M. saxatilis	96 hrs	LC50	2 mg/l

TABLE 2. IDENTIFICATION OF LOWEST TOXICITY LEVELS

(a)
P. promelas = fathead minnow
L. macrochirus = bluegill sunfish
C. auritus = goldfish
P. reticulata = guppy
D. pulex, D. magna, D. cucullata = water fleas
S. trutta = brook trout
C. tentans = midge
M. saxitilis = striped bass

(b)
Note that effect levels are presented in different units ranging from ug to g/l

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TABLE 3 RECOMMENDED INSTREAM CONCENTRATIONS (μg/L) FOR LOCAL LIMIT DEVELOPMENT

Compound	Acute	Chronic	Comment
Acetone	1,000	100	Estimated concentration[a]
Alachlor	467	47	Estimated concentration
Aldrin	3	--	U.S. EPA criterion
Aniline	10	1	Estimated concentration
Arsenic (+5)	850	48	U.S. EPA LOEL
Arsenic (+3)	360	190	U.S. EPA criteria
Atrazine	72	7.2	Estimated concentration
BHC	2.0	0.06	U.S. EPA criteria
Benzene	5,300	--	U.S. EPA LOEL
Bis(2-ethylhexyl)phthalate	940	3	U.S. EPA LOEL
Beryllium	130	5.3	U.S. EPA LOEL
Boron	9,300	930	Estimated concentration
Bromodichloromethane	11,000	--	U.S. EPA LOEL
2-Butanone	322,000	32,200	Estimated concentration
Butoxyethoxyethanol	115,000	11,500	Estimated concentration
Butylbenzylphthalate	940	3	U.S. EPA LOEL
Cadmium	8.6	2	U.S. EPA criteria
Chlordane	2.4	0.0043	U.S. EPA criteria
Chloride	860,000	230,000	U.S. EPA criteria
Chlorine	19	11	U.S. EPA criteria
4-Chloroaniline	240	24	Estimated concentration
2-Chloroaniline	568	57	Estimated concentration
Chlorobenzene	250	50	U.S. EPA LOEL
Chloroform	28,900	1,240	U.S. EPA LOEL
Chloronitrobenzene	120	12	Estimated concentration
Chromium (+3)	3,100	370	U.S. EPA criteria
Chromium (+6)	16	11	U.S. EPA criteria
Copper	34	21	U.S. EPA criteria
Cyanide	22	5.2	U.S. EPA criteria
2-Chlorophenol	4,300	2,000	U.S. EPA LOEL
1,2-Dichloroethane	118,000	20,000	U.S. EPA LOEL
Dichlorobenzene	1,120	763	U.S. EPA LOEL
2,4-Dimethylphenol	2,120	--	U.S. EPA LOEL
2,4-Dinitrophenol	230	150	U.S. EPA LOEL
Di-n-butylphthalate	940	3	U.S. EPA LOEL
2,4-Dichlorophenol	2,020	365	U.S. EPA LOEL
p,p'-DDT	1.1	0.001	U.S. EPA criteria
Ethylbenzene	32,000	--	U.S. EPA LOEL
Fluoride	12,500	1,250	Estimated concentration
Heptachlor	0.52	0.0036	U.S. EPA criteria

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TABLE 3 (Cont.)

Compound	Acute	Chronic	Comment
Iron	--	1,000	U.S. EPA criterion
Lead	200	7.7	U.S. EPA criteria
Manganese	100	20	AFS 1979
Methylene chloride	11,000	--	U.S. EPA LOEL
2-Methyl-2-propanol	355,000	35,500	Estimated concentration
4-Methyl-2-pentanone	46,000	4,600	Estimated concentration
5-Methyl-2-hexanone	15,900	1,590	Estimated concentration
Mercury	2.4	0.12	U.S. EPA criteria
4-Nitroaniline	2,400	240	Estimated concentration
Nitrophenols	230	150	U.S. EPA LOEL
Naphthalene	2,300	280	U.S. EPA LOEL
Nickel	2,500	620	U.S. EPA criteria
Nitrobenzene	27,000	--	U.S. EPA LOEL
N-nitrosodiphenylamine	5,850	--	U.S. EPA LOEL
Phenol	10,200	2,560	U.S. EPA LOEL
Phenylbicyclohexyl	4,440	444	Estimated concentration
Silver	13	0.12	U.S. EPA criteria
Selenium	20	5	U.S. EPA criteria
1,1,1-Trichloroethane	18,000	--	U.S. EPA LOEL
Toluene	17,500	--	U.S. EPA LOEL
1,2,4-Trichlorobenzene	250	50	U.S. EPA LOEL
o-xylene	1,300	130	Estimated concentration
m-xylene	920	92	Estimated concentration
p-xylene	200	20	Estimated concentration
Zinc	210	190	U.S. EPA criteria

a) Unless noted otherwise in text, the estimated acute concentration = LC50/10 and the estimated chronic concentration = LC50/100. Note, the LC50 values used for calculating estimated concentrations are presented in Table 2.

TABLE 4 IDENTIFICATION OF OCTANOL-WATER PARTITION COEFFICIENTS (LOG P) AND BIOCONCENTRATION FACTORS (BCF)

Compound	Log P	BCF
Acetone	-0.24 (a)	
Alachlor	6.32 (b)	
Aldrin	5.3 (e)	1,557 (d)
Aniline	0.90 (a)	6 - 10 (g)
Arsenic		44 (d)
Atrazine	2.71 (f)	2 - 83 (a)
BHC	3.80 (d)	130 (d)
Barium		10 (f)
Benzene	2.13 (d)	5.2 (f)
Benzofuran	2.67 (a)	
Beryllium		19 (f)
Bis(2-ethylhexyl)phthalate	4.88 (b)	130 (d)
Boron		
Bromodichloromethane	1.88 (c)	
2-Butanone	0.26 (a)	0 (f)
Butoxyethoxyethanol	0.40 (a)	
Butylbenzylphthalate	4.91 (g)	414 (d)
Cadmium		766 (d)
Chlordane	6.0 (c)	4,702 (d)
Chloride		
Chlorine		
2-Chloroaniline	1.9 (a)	20 - 200 (g)
4-Chloroaniline	1.83 (a)	< 20 (g)
Chlorobenzene	2.84 (a)	10 (d)
Chloroform	1.97 (a)	3.75 (d)
Chloronitrobenzene	2.41 (a)	7.1 - 288 (g)
2-Chlorophenol	2.19 (a)	214 (d)
Chromium (+3)		130 (d)
Chromium (+6)		<1 (d)
Cineole		
Copper		328 (d)
Cyanide		
Di-n-butylphthalate	5.6 (e)	748 (d)
p,p'-DDT	6.19 (a)	53,600 (d)
1,2-Dichloroethane	1.45 (c)	1.2 (d)
1,2-Dichlorobenzene	3.38 (a, f, g)	55.6 (d)
1,3-Dichlorobenzene	3.6 (f)	41.2 (d)
1,4-Dichlorobenzene	3.6 (f)	37.5 (d)
2,4-Dichlorophenol	3.19 (d)	41 (d)
2,4-Dimethylphenol	2.42 (c)	150 (d)
2,4-Dinitrophenol	1.54 (a)	<10 (g)
Ethoxybenzenamine		
Ethylbenzene	3.15 (a)	37.5 (d)
Fluoride		
Heptachlor	4.4 (e)	11,200 (d)
Hetylnonylbenzene		

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TABLE 4 (Cont.)

Compound	Log P	BCF
Iron		
Lead		49 (d)
Manganese		366 (d)
Mercury		3,750 (d)
Methylene chloride	1.25 (a)	0.91 (d)
2-Methylnaphthalene	3.86 (j)	28 - 23500 (a, h)
2-Methyl-2-propanol	0.37 (a)	
4-Methyl-2-pentanone		
5-Methyl-2-hexanone		
Naphthalene	3.45 (a)	10 - 1000 (f)
2-Nitroaniline	1.34 (i)	
4-Nitroaniline	1.83 (a)	
2-Nitrophenol	1.79 (g)	6 (g)
3-Nitrophenol	2.0 (g)	19 (g)
4-Nitrophenol	1.91 (d)	58 - 79 (g)
Nickel		47 (d)
Nitrobenzene	1.88 (d)	<10 - 15 (g)
N-nitrosodiphenylamine	3.13 (c)	136 (d)
Phenol	1.46 (a)	1.2 (d)
Phenylbicyclohexyl		
Phenyl-formamide		
Propynylbenzene	3.69 (j)	
Silver		26 (d)
Selenium		16 (d)
1,2,4-Trichlorobenzene	4.23 (a)	182 (d)
1,1,1-Trichloroethane	2.47 (c)	9 (d)
Toluene	2.69 (a)	10.7 (d)
o-Xylene	2.95 (f)	
m-Xylene	3.26 (f)	
p-Xylene	3.15 (f)	
Zinc		651 (d)

a Verschueren, K. 1983. Handbook of Environmental Data on Organic Chemicals. Second Edition. Van Nostrand REinhold Company. New York. 1300 pp.

b Agency for Toxic Substances and Disease Registry. 1987-1989. Individual Toxicological Profiles (30 Chemicals).

c Tetra Tech, Inc. 1985. Bioaccumulation Monitoring Guidance: 1. Estimating the Potential for Bioaccumulation of Priority Pollutants and 301 (h) Pesticides Discharged into Marine and Estuarine Waters. Final Report. EPA Contract No. 68-01-6938.

d U.S. EPA's Water Quality Criteria Documents e U.S. EPA. 1982. Aquatic Fate Processes For Organic Priority Pollutants. Office of Water. Washington DC. EPA 440/4-81-014.

f Values from: OWSER Superfund Public Health Evaluation Manual, Office of Drinking Water Health Advisories for ...(PB87-235578, PB87-235586 and PB87-245931) and/or Office of Water Planning and Standards Water Related Environmental Fate of 129 Priority Pollutants.

g Howard, P.H. 1989. Handbook of Environmental Fate and Exposure Data for Organic Chemicals, Volume 1. Lewis Publishers.

h Aquatic Information Retrieval (ACQUIRE). 1987. Chemical Information Service.

i Leo A., C. Hansch, D. Elkins. 1971. Partition Coefficients and Their Uses. Chemical Reviews 71:526-616.

j Miller M.M., S.P. Waslk, G. Huang, W. Shiu and D. Mackay. 1985. Relationship between Octanol-Water Partition Coefficient and Aqueous Solubility. Environmental Science and Technology 19:522-529.

TABLE 5. IDENTIFICATION OF COMPOUNDS WITH LOG P GREATER THAN 3.5 OR BCF GREATER THAN 188

Compound	Range in Final Effluent		Mean Concentration	Human Health-Based Water Quality Criteria: Fish and Water Cons.	Human Health-Based Water Quality Criteria: Fish Cons. Only
Alachlor	ND	67 µg/L	7.0 µg/L	NA	NA
Aldrin	ND			0.074 ng/L	0.079 ng/L
BHC	ND	0.1 µg/L	0.01 µg/L	12.3 ng/L	41.1 ng/L
Bis-2-ethylhexyl-phthalate	ND	26 µg/L	12. µg/L	15.0 mg/L	50. mg/L
Butylbenzylphthalate	ND			NA	NA
Cadmium	ND	7 µg/L	2. µg/L	10.0 µg/L	NA
Chlordane	ND			0.46 ng/L	0.48 ng/L
Copper	ND	55 µg/L	24. µg/L	NA	NA
2-Chlorophenol	ND	37 µg/L	13. µg/L	NA	NA
Di-n-butylphthalate	ND	1 µg/L	0.1 µg/L	35.0 mg/L	154. mg/L
4,4'-DDT	ND			0.024 ng/L	0.024 ng/L
1,3-Dichlorobenzene	ND			400. µg/L	2.6 mg/L
1,4-Dichlorobenzene	ND	56 µg/L	26. µg/L	400. µg/L	2.6 mg/L
Heptachlor	ND			0.26 ng/L	0.29 ng/L
Lead	ND	13 µg/L	9.5 µg/L	50.0 µg/L (a)	NA
Manganese		141-600 µg/L	313. µg/L	50.0 µg/L	100. µg/L
2-Methylnaphthalene	ND			NA	NA
Mercury	ND			144.0 ng/L	146. ng/L
Naphthalene	ND	20 µg/L	2. µg/L	NA	NA
Propynylbenzene	ND			NA	NA
Silver	ND	93 µg/L	8. µg/L	50. µg/L	NA
1,2,4-Trichlorobenzene	ND			NA	NA
Zinc	14	451 µg/L	120. µg/L	NA	NA

Cons. = Consumption

ND = Not Detected

NA = Human health-based criteria not available from U.S. EPA 1986

(a) Calculated at 10^{-6} risk level.

APPENDIX H

CALCULATION OF ALLOWABLE HEADWORKS CONCENTRATIONS USING MEDIAN REMOVAL EFFICIENCIES AND MODIFIED ALLOWABLE HEADWORKS CONCENTRATIONS

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AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX H

CALCULATION OF ALLOWABLE HEADWORKS CONCENTRATIONS USING MEDIAN REMOVAL EFFICIENCIES AND MODIFIED ALLOWABLE HEADWORKS CONCENTRATIONS

Parameter	Allowable Effluent Concentration (mg/l)	Median Removal Across ABIP Secondary (%)	Allowable ABIP Secondary Influent Concentration (mg/l)	Allowable ABIP Secondary Influent Mass (lb/day)	Average ABIP Primary Effluent Concentration (mg/l)	Average ABIP Primary Effluent Mass (lb/day)	Average P Chem Effluent Concentration (mg/l)	Average P Chem Effluent Mass (lb/day)	Total ABIP Secondary Influent Mass (lb/day)	Allowable ABIP Primary Effluent Mass (lb/day)	Median Removal Across ABIP Primary (%)	Allowable ABIP Primary Influent Mass (lb/day)	Median Based Allowable ABIP Primary Influent Concentration (mg/l)	Modified Allowable Headworks Concentration (mg/l)	Allowable P Chem Effluent Mass (lb/day)	Median Removal Across P Chem (%)	Allowable P Chem Influent Mass (lb/day)	Median Based Allowable P Chem Influent Concentration (mg/l)	Modified Allowable Headworks Concentration (mg/l)
NOTES:	(1)	(2a,b,c,d)	(3)	(4a,b)	(2a,e,5)	(4a,c)	(2a,d,5)	(4a,d)	(6)	(7)	(2a,b,c,d)	(3)	(8,4c)	(12)	(9)	(2a,b,c,d)	(3)	(8,4d)	(12)
Aniline (Acute Toxicity Based)	0.16	100.0	(2b)								Noninfluent		N/A (2c)					(2b)	0.0
Aniline (Chronic Toxicity Based)	0.37	100.0	(2b)								Noninfluent		N/A (2c)					(2b)	
Arsenic, Total (FWQC Acute Based)(10)	94	0.0	94	13,051	0.035	2.8	0.015	0.86	3.7	10,031	20.6	14,044	170			N/A (13)			
Arsenic III (FWQC Acute)	28	0.0	28	3,883	0.036	2.8	0.015	0.86	3.7	2,985	20.6	4,170	51			N/A (13)			
Arsenic V (FWQC Acute)	66	0.0	66	9,168	0.035	2.8	0.015	0.86	3.7	7,047	20.6	9,865	120			N/A (13)			
Arsenic (FWQC Chronic Based)(10)	247	0.0	247	34,186	0.036	2.8	0.015	0.86	3.7	26,270	20.6	36,780	450			N/A (13)			
Arsenic III (FWQC Chronic)	70	0.0	70	9,695	0.036	2.8	0.015	0.86	3.7	7,452	20.6	10,432	130			N/A (13)			
Arsenic V (FWQC Chronic)	177	0.0	177	24,493	0.036	2.8	0.015	0.86	3.7	18,826	20.6	26,355	320			N/A (13)			
Arsenic (State Chronic Based)	369	0.0	360	51,024	0.036	2.8	0.015	0.86	3.7	39,220	20.6	54,907	680			N/A (13)			
Arsenic (Activated Sludge Based)			0.10								20.6		0.14	0.14		N/A (13)			
BOD (Based on Design Capacity)				67,000	59	4,193	180	10,260	15,061	21,322	31.2	30,991	380	380	45,670	13.7	52,925	930	930
Cadmium (FWQC Acute Based)	0.67	100.0	(2b)										(2b)						
Cadmium (FWQC Chronic Based)	0.74	100.0	(2b)										(2b)						
Cadmium (State Chronic Based)	16	100.0	(2b)										(2b)						
Cadmium (NPDES)	0.15	100.0	(2b)										(2b)						
Cadmium (Activated Sludge Based)			5.0								16.7		8.0		86	N/A (13)			
Chromium, Total (NPDES)	1.0	100.0	(2b)										(2b)					(2b)	
Chromium, Total (FWQC Acute Based)(11)	243	100.0	(2b)										(2b)					(2b)	
Chromium, Total (FWQC Chronic Based)(11)	141	100.0	(2b)										(2b)					(2b)	
Chromium, Total (State Chronic Based)	307	100.0	(2b)										(2b)					(2b)	
Chromium, Total (Activated Sludge Based)			50.0								43.4		80.0		20	N/A (13)			
Copper (NPDES)	0.50	67.6	1.5	213	0.050	4.1	0.40	20	32	27	29.2	38	0.47		186	N/A (13)			
Copper (FWQC Acute Based)	2.7	67.6	8.2	1,131	0.050	4.1	0.40	20	32	144	29.2	203	2.5		980	N/A (13)			
Copper (FWQC Chronic Based)	7.7	67.6	24	3,306	0.050	4.1	0.40	20	32	410	29.2	582	7.3		2,886	N/A (13)			
Copper (State Chronic Based)	7.4	67.6	23	3,160	0.050	4.1	0.40	20	32	390	29.2	564	6.9		2,760	N/A (13)			
Copper (Activated Sludge Based)			1.0								29.2		1.6	1.4	121	N/A (13)			
Cyanide, Total (FWQC Acute Based)	1.7	0.0	1.7	237	0.000	0.000	0.001	0.057	0.057	0.000	Noninfluent		N/A(2c)	10.0	237	100.0		(2c)	10.0
Cyanide, Total (FWQC Chronic Based)	1.9	0.0	1.9	265	0.000	0.000	0.001	0.057	0.057	0.000	Noninfluent		N/A(2c)		265	100.0		(2b)	
Cyanide, Total (State Chronic Based)	9.2	0.0	9.2	1,276	0.000	0.000	0.001	0.057	0.057	0.000	Noninfluent		N/A(2c)		1,276	100.0		(2b)	
Cyanide, Total (Activated Sludge Based)			0.10	14	0.000	0.000	0.001	0.057	0.057	0.000	Noninfluent		N/A(2c)		14	100.0		(2b)	
Lead (NPDES)	0.20	84.1	1.3	174	0.023	1.9	0.030	1.7	3.6	91	57.5	214	2.6		83	N/A (13)			
Lead (FWQC Acute Based)	16	84.1	98	13,504	0.023	1.9	0.030	1.7	3.6	7,090	57.5	16,682	210		6,494	N/A (13)			
Lead (FWQC Chronic Based)	1.6	84.1	10	2,474	0.023	1.9	0.030	1.7	3.6	1,291	57.5	3,030	37		1,183	N/A (13)			
Lead (State Chronic Based)	37	84.1	232	32,131	0.023	1.9	0.030	1.7	3.6	16,770	57.5	39,450	490		15,361	N/A (13)			
Lead (Activated Sludge Based)			5.0								57.5		12		6.6	N/A (13)			
Mercury (Activated Sludge Based)			0.10	14	0.000	0.000	0.000	0.000	0.000		100.0		N/A(2b)	0.006		N/A (13)		N/A(2c)	0.006
Mercury (NPDES)	0.0005	100.0	(2b)										(2b)					(2b)	
Mercury (FWQC Acute Based)	0.19	100.0	(2b)										(2b)					(2b)	
Mercury (FWQC Chronic Based)	0.04	100.0	(2b)										(2b)					(2b)	
Mercury (State Chronic Based)	0.10	100.0	(2b)										(2b)					(2b)	
Nickel (NPDES)	1.0	23.5	1.3	181	0.030	2.4	0.64	37	39	11	9.1	12	0.15		169	N/A (13)			
Nickel (Activated Sludge Based)			5.0								9.1		1.3	1.1	130	N/A (13)			
Nickel (FWQC Acute Based)	195	23.5	255	35,256	0.030	2.4	0.64	37	39	2,206	9.1	2,427	30		33,050	N/A (13)			
Nickel (FWQC Chronic Based)	229	23.5	299	41,364	0.030	2.4	0.64	37	39	3,900	9.1	2,847	35		38,776	N/A (13)			
Nickel (State Chronic Based)	369	23.5	482	66,716	0.030	2.4	0.64	37	39	4,175	9.1	4,592	57		62,541	N/A (13)			
Phenolics (State Chronic Based)	37	81.1	196	27,040	0.14	11	1.4	80	91	3,370	0.6	3,391	42		23,669	0.0	23,669	420	
Phenolics (NPDES)	0.30	81.1	1.6	220	0.14	11	1.4	80	91	27	0.6	28	0.36	0.34	192	0.0	192	3.4	1.4
Phenolics (Activated Sludge Based)			200	27,655	0.14	11	1.4	80	91	3,447	0.6	3,468	43		24,200	0.0	24,200	420	

AMERICAN BOTTOMS REGIONAL PRETREATMENT PROGRAM

APPENDIX H

CALCULATION OF ALLOWABLE HEADWORKS CONCENTRATIONS USING MEDIAN REMOVAL EFFICIENCIES AND MODIFIED ALLOWABLE HEADWORKS CONCENTRATIONS

Parameter	Allowable Effluent Concentration (mg/l)	Median Removal Across ABTP Secondary (%)	Allowable ABTP Secondary Influent Concentration (mg/l)	Allowable ABTP Secondary Influent Mass (lb/day)	Average ABTP Primary Effluent Concentration (mg/l)	Average ABTP Primary Effluent Mass (lb/day)	Average P Chem Effluent Concentration (mg/l)	Average P Chem Effluent Mass (lb/day)	Total ABTP Secondary Influent Mass (lb/day)	Allowable ABTP Primary Effluent Mass (lb/day)	Median Removal Across ABTP Primary (%)	Allowable ABTP Primary Influent Mass (lb/day)	Median Based Allowable ABTP Primary Influent Concentration (mg/l)	Modified Allowable Headworks Concentration (mg/l)	Allowable P Chem Effluent Mass (lb/day)	Median Removal Across P Chem (%)	Allowable P Chem Influent Mass (lb/day)	Median Based Allowable P Chem Influent Concentration (mg/l)	Modified Allowable Headworks Concentration (mg/l)
NOTES	(1)	(2a,b,c,d)	(3)	(4a,b)	(2a,d,5)	(4a,c)	(2a,d,5)	(4a,d)	(6)	(7)	(2a,b,c,d)	(3)	(8,4c)	(12)	(9)	(2a,b,c,d)	(3)	(8,4d)	(12)
Silver (FWQC Acute Based)	1.0	Noninfluent	NLR(2c)								Noninfluent					N/A (13)			
Silver (FWQC Chronic Based)	0.44	Noninfluent	NLR(2c)								Noninfluent					N/A (13)			
Silver (State Chronic Based)	1.0	Noninfluent	NLR(2c)								Noninfluent					N/A (13)			
Zinc (FWQC Acute Based)	16	95.3	37	5,061	0.22	18	1.1	63	81	1,122	47.1	2,121	26		1,919	N/A (13)			
Zinc (FWQC Chronic Based)	16	95.3	151	21,664	0.22	18	1.1	63	81	4,502	47.1	9,016	110		15,562	N/A (13)			
Zinc (State Chronic Based)	369	95.3	835	114,021	0.22	18	1.1	63	81	28,278	47.1	47,770	590		88,746	N/A (13)			
Zinc (NPDES)	1.0	95.3	2.2	300	0.22	18	1.1	63	81	60	47.1	129	1.6		241	N/A (13)			
Zinc (Activated Sludge Based)			1.0								47.1		1.9	1.9	0.5	N/A (13)			

NOTES

1. The allowable effluent concentrations are based on values identified in Table 6. The following are based on NPDES permit values, and therefore would be unaffected by application of a effluent dilution factor: BOD, Cadmium, Total Chromium, Iron, Lead, Nickel, Oil & Grease, Phenols, and Total Suspended Solids. Information on activated sludge based inhibitory levels is provided in Table 9. 70:1 dilution has been applied to acute standards/criteria. 360:1 dilution has been applied to chronic standards/criteria.
2. a) As determined from Gulf Coast (GC) data except where American Bottoms data was deemed more applicable.
   b) Where calculated median removal equals 100%, no influent limits can be calculated based on the median. These parameters may require independent evaluation for development of local limits if Table 5B indicates a required dilution factor or process inhibition has been observed.
   c) Where analytical results showed zero influent concentration (Noninfluent), no limit is required (NLR) as the parameter is not found in that wastestream.
   d) AB data used for BOD, Iron, and Total Suspended Solids.
3. Influent = Effluent / (1-Removal efficiency), or is provided as inhibitory influent concentration (activated sludge based).
4. a) Mass (lb/day) = Concentration (mg/l) x Flow (MGD) x 8.34.
   b) Average daily flow May 1, 1988 - April 30, 1989 : ABTP Secondary = 16.50 MGD.
   c) Average daily flow May 1, 1988 - April 30, 1989 : ABTP Primary = 9.74 MGD.
   d) Average daily flow May 1, 1988 - April 30, 1989 : P-Chem Plant = 6.84 MGD.
5. Where Gulf Coast data has been used, zero data for those months in which the parameter was undetected have been included for the calculation of average concentrations. Averages have been rounded to two significant figures.
6. ABTP Secondary Influent Mass = P-Chem Effluent Mass + ABTP Primary Effluent Mass.
7. Allowable ABTP Secondary Influent Mass x (Average ABTP Primary Effluent Mass / Total ABTP Secondary Influent Mass).
8. Concentration (mg/l) = Required Mass (lb/day) / (Flow (MGD) x 8.34). Values are rounded to two significant figures.
9. Allowable ABTP Secondary Influent Mass x (Average P-Chem Effluent Mass / Total ABTP Secondary Influent Mass).
10. Federal Water Quality Criteria were identified for pentavalent and trivalent arsenic independently but not for total arsenic. Analyses conducted were for total arsenic. Total arsenic criteria shown were calculated as the sum of the pentavalent and trivalent criteria. In addition, the removals and data for total arsenic were also used in conjunction with the criteria for each valent species as if the total consisted entirely of trivalent or pentavalent arsenic.
11. Federal Water Quality Criteria were identified for trivalent and hexavalent chromium independently, but not for total chromium. The Federal criteria shown for total chromium is actually the sum of the criteria for trivalent and hexavalent chromium.
12. Refer to text in Section IV. D. for the method used in determining the modified allowable headworks concentrations for each parameter.
13. Median removals were not applicable to metals in the P-Chem Plant.

CER 055741

APPENDIX I

LETTER TO USEPA FROM ABTP DATED AUGUST 16, 1989
CONCERNING LOCAL LIMITS FOR PHENOLICS

CER 055742

AMERICAN BOTTOMS

REGIONAL WASTEWATER TREATMENT FACILITY

AMERICAN BOTTOMS ROAD

SAUGET, ILLINOIS 62201

618/337-[illegible]

FAX 618/337-[illegible]

August 16, 1989

U.S. Environmental Protection Agency
Region V
Water Division
230 South Dearborn Street
Chicago, Illinois 60604

ATTN: Mr. Donald R. Schregardus
Chief, Compliance Section (5WQC-TUB-8)

Dear Sirs:

By letter dated January 31, 1989, the Village of Sauget submitted to the United States Environmental Protection Agency Region V and to the Illinois Environmental Protection Agency the Village's "Report on Local Limit Allocation for Phenols" (the "Phenols Report") which was developed as part of the American Bottoms Regional Pretreatment Program. The Phenols Report presented suggested local limits for phenols with respect to certain industrial users. (See Phenols Report at Tables 3 and 4; and p. 16). Upon further consideration since the submission of that Phenols Report, and before any action by you and/or Illinois Environmental Protection Agency thereon, Sauget has serious concerns that the implementation of a phenols local limit may not be legally defensible.

The main reason that Sauget submitted that Phenols Report was the Village's then understanding that Region V believed such local limits were necessary and required under Sauget's Pretreatment Program. By Mr. Sutfin's letter of December 16, 1988 and Mr. Schregardus' letter of January 27, 1989, Sauget understood Region V to expressly request that Sauget propose specific local limits for phenols or face enforcement action. Rather than contest this matter with Region V, Sauget complied with Region V's request.

However, as shown in the Phenols Report, the proposed local limits for phenols do not appear to be justified given that at or above the maximum allowable loading tributary from industries of phenols to the American Bottoms plant (e.g. 153 lbs./day or greater), the plant's average phenols removal efficiency is approximately 88% and past NPDES excursions have not occurred at these levels. Further, there have not been any phenols excursions whatever since October, 1988.

CER 055743

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Under Section 3.3 of Sauget's Pretreatment Ordinance, Sauget is empowered to develop local limits to assure proper functioning of the American Bottoms plant and compliance with the General Pretreatment Regulations (40 CFR 403). The results of the various sampling programs Sauget has conducted for the American Bottoms plant do not indicate that the phenols loadings to the plant are causing or will cause pass-through, interference, sludge quality, or worker health and safety problems.

Based on discussions concerning the Phenols Report with Region V's representatives during the June, 1989 Pretreatment Program Audit, we have concluded that Region V may share our concern that the proposed phenols local limits are not justified.

Accordingly, we are writing to express our desire to withdraw the proposed local limits for phenols subject to the approval of Region V. Our request is intended to dispense with the need of either agency to comment on that report should a phenols local limit be viewed as unnecessary.

Sincerely,

George R. Schillinger
General Manager

GRS:ld

c Dr. Anne Weinert
  David Rankin, Regional Pretreatment Coordinator,
    Water Division, 5 WOP-8-TUB
  James Park, IEPA

CER 055744